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A COMPETITIVE ASSESSMENT OF THE U.S. JEWELRY INDUSTRY, PHASE II: PRECIOUS JEWELRY

Report to the Committee on Finance, U.S. Senate, Investigation No. 332-222, Under Section 332(g) of the Tariff Act of 1930

USITC PUBLICATION 2013

SEPTEMBER 1987

United States International Trade Commission / Washington, DC 20436

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Preface

On January 8, 1986, at the request of the Committee on Finance of the U.S. Senate 1/ and in accordance with section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), the United States International Trade Commission instituted investigation No. 332-222, A Competitive Assessment of the U.S. Jewelry Industry. The Commission was asked to issue two consecutive reports--the first examined the conditions of competition that affected the costume jewelry segment of the U.S. industry and second, the conditions of competition that have affected the precious jewelry (including precious metal chain) segment of the U.S. industry. In each report, the Commission was asked to provide information on the key economic factors in the U.S. market, competitive factors including price, quality, design, marketing techniques, employment levels and trends, and government standards and regulations as to the country of origin and precious metal content marking of jewelry, including Customs procedures for enforcing such standards and regulations.

Notice of the investigation was given by posting copies of the notice of investigation at the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publication of the notice in the Federal Register (51 F.R. 3272, Jan. 24, 1986). 2/

No public hearings were conducted for this investigation; however, Commission Staff were invited to, and attended, the New York Jewelers of America (JA) 3/ trade show, during February 1-4, 1987, for the purpose of interviewing industry representatives on trade matters. In addition, the Manufacturing Jewelers and Silversmiths of America (MJSA) 4/ sponsored three industry forums to discuss trade issues. The first forum was held on March 4, 1986, in New York, NY; the second was held on April 1, 1986, in Providence, RI; and the third was held on April 7, 1986, in Los Angeles, CA. Although the forums were held during the first phase of this study, the Commission received statements concerning both phases from Members of Congress and from U.S. producers, importers, and purchasers of costume and precious jewelry.

In the course of this investigation, the Commission collected data and information from questionnaires sent to U.S. producers, importers, and purchasers of precious jewelry. 5/ In addition, information was gathered from various public and private sources, the industry forums, overseas posts of the U.S. Department of State, foreign field work in Arezzo, Milan, Valenza, and Vicenza, Italy; and from interviews with industry executives representing producers, importers, and purchasers of precious jewelry, as well as from public data gathered in other Commission studies and from other sources.

1/ The request from the Committee on Finance is reproduced in app. A.

2/ A copy of the Commission's Notice of Investigation is reproduced in app. B.

3/ JA is the national trade association of retail jewelers, representing approximately 12,000 members.

4/ MJSA is the principal trade association for domestic jewelry manufacturers, representing some 2300 members.

5/ A discussion of the survey design and methodology appears in app. C.

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Executive Summary

The United States has a large and highly competitive market for precious jewelry. The apparent consumption exceeded $5 billion in 1986 and imports came from every major producing country in the world. Precious jewelry may be defined as any article of personal adornment that is made of precious materials. Precious materials include precious metals, such as gold, silver, and platinum, and precious and semiprecious gemstones (including natural but not cultured pearls). Precious jewelry is often categorized as either precious-metal jewelry or gemstone jewelry depending on the type of material used. Gemstone jewelry usually contains some precious metal content as well as one or more gems. The most common articles of precious jewelry are rings, bracelets, earrings, pendants, and necklaces.

In recent years, there was a substantial increase in consumption of precious jewelry in the United States, with most of the increase supplied by imports. During the 5-year period covered in this study (1982-86), the value of U.S. apparent consumption increased by 44.8 percent, an apparent result of the significant reduction in gold prices in the U.S. market, which was a direct result of the substantial decline in the world price of gold. Gold constitutes a major portion of the cost of producing precious jewelry, especially precious-metal jewelry. There may have been a reduction in the speculative demand for jewelry during this period, but not enough to offset the effect of the increase in supply.

Because imports have increased a great deal and domestic production has increased only slightly, there has been a substantial increase in the share of the U.S. market supplied by imports. This share has increased from 31.1 percent in 1982 to 45.2 percent in 1986 for precious-metal jewelry, from 6.8 percent to 17.9 percent for gemstone jewelry, and from 23.4 percent to 37.4 percent for precious jewelry overall.

This study identifies three apparent reasons for this rapid market penetration by imports. First, that the decline in the price of gold during this period has indirectly given an advantage to foreign suppliers. Because gold is internationally traded with nearly identical prices worldwide, the price decline reduced the raw material costs of producing precious jewelry common to all producers but increased the relative importance of the cost of other inputs, notably labor, and consequently favored foreign suppliers with lower labor costs. Second, that the appreciation of the U.S. dollar that occurred early on and during most of the study period reduced the relative costs of the local value-added for foreign producers while the dollar cost of purchasing foreign goods declined. Finally, that there has been an increase in sales in the United States by several nontraditional foreign suppliers, many of whom receive preferential tariff treatment under the Generalized System of Preferences.

Data on the U.S. precious jewelry industry and market are provided in table A. This is followed by the major findings of this investigation.

Table A
Profile of U.S. precious jewelry industry and market, 1982-86

Item	1982	1983	1984	1985	1986	Percentage change, 1985 from 1982	Percentage change, 1986 from 1985	Average annual change, 1986 from 1982
Apparent consumption...million dollars..	3,669	3,921	4,556	5,097	5,313	38.9	4.2	9.7
Precious metal...do....	2,505	2,653	3,206	3,569	3,795	42.5	6.1	10.9
Gemstone...do....	1,164	1,268	1,349	1,529	1,527	31.3	-0.1	7.0
Shipments 1/...do....	2,927	3,140	3,455	3,682	3,676	19.0	-0.2	4.4
Precious metal...do....	1,772	1,922	2,219	2,112	2,160	19.2	2.3	5.1
Gemstone...do....	1,155	1,238	1,236	1,371	1,315	18.7	-4.1	3.3
Imports 2/...do....	857	878	1,196	1,729	1,906	101.6	14.9	23.4
Precious metal 2/...do....	778	779	1,038	1,514	1,712	94.6	13.1	21.8
Gemstone 2/...do....	79	99	158	214	274	170.9	28.0	36.5
Imports to consumption ratio...percent..	23.4	22.4	26.3	33.9	37.4	-	-	-
Precious metal...do....	31.1	29.4	32.4	42.4	45.2	-	-	-
Gemstone...do....	6.8	7.8	11.8	14.0	17.9	-	-	-
Exports 2/...million dollars..	114	117	95	114	148	0.0	29.8	6.7
Precious metal 2/...do....	45	48	50	57	87	26.7	52.6	17.9
Gemstone 2/...do....	70	69	46	57	62	-18.6	8.8	-3.0
Ratio of exports to shipments...percent..	3.9	3.7	2.7	3.3	4.3	-	-	-
Precious metal...do....	2.5	2.5	2.3	2.7	4.0	-	-	-
Gemstone...do....	6.1	5.6	3.7	4.2	4.7	-	-	-
Trade balance 2/...million dollars..	-742	-761	-1,101	-1,614	-1,837	117.5	13.8	25.4
Precious metal...do....	-733	-736	-988	-1,458	-1,625	98.9	11.5	22.0
Gemstone...do....	-9	-30	-113	-157	-213	1,644.4	35.7	120.6
Capacity utilization: 3/...percent..	3/	67	56	51	3/	3/	3/	3/
Employment: 3/								
Total...number..	36,200	36,200	36,700	37,200	36,200	2.8	-2.7	0.0
Production workers...do....	25,500	25,500	25,400	25,300	24,800	-0.8	-2.0	-0.7
Net sales 4/...million dollars..	458	476	526	525	581	14.6	10.7	6.1
Precious metal 5/...do....	393	400	449	448	492	14.9	11.8	6.5
Gemstone 6/...do....	14	18	23	27	3/	92.9	3/	3/
Net income before income taxes 4/...do....	22	6	19	28	18	27.3	-35.7	-4.9
Precious metal 5/...do....	20	13	25	31	22	3.9	-29.0	-7.6
Gemstone 6/...do....	0.4	1.0	0.9	1.6	3/	300.0	3/	3/
Operating profits 4/...do....	31	1.0	32	44	34	41.9	-22.7	2.3
Precious metal 5/...do....	25	23	32	41	31	16.4	-24.4	-3.3
Gemstone 6/...do....	0.2	1.5	1.5	2.8	3/	900.0	3/	3/
Ratio of gross profit to net sales 4/ percent..	34.0	33.4	32.6	36.2	33.9	-	-	-
Precious metal 5/...do....	34.2	33.0	31.5	35.2	32.9	-	-	-
Gemstone 6/...do....	21.5	24.2	23.8	25.2	3/	-	-	-
Ratio of net income before income taxes to net sales 4/...do....	4.8	1.2	3.6	5.2	3.1	-	-	-
Precious metal 5/...do....	7.9	3.3	5.5	7.1	4.5	-	-	-
Gemstone 6/...do....	2.7	3.9	3.9	5.8	3/	-	-	-
Capital expenditures: 7/								
Total...million dollars..	8	7	9	11	11	37.5	1.8	7.9
Ratio of capital expenditures to total net sales...percent..	3.1	2.5	2.7	3.4	3.1	-	-	-
Research and development: 8/								
Total...million dollars..	3	4	4	4	4	17.6	9.4	7.5
Ratio of research and development to total net sales...percent..	2.1	2.2	2.1	2.1	2.0	-	-	-

1/ U.S. industry total projected from questionnaire responses of a sample of U.S. producers of precious jewelry (see app. C for a discussion of survey methodology).
2/ Compiled from official statistics of the U.S. Department of Commerce.
3/ Not available.
4/ Compiled from responses of 25 U.S. producers supplying usable income-and-loss data to questionnaires of the U.S. International Trade Commission. These firms together accounted for approximately 17 percent of estimated U.S. producers shipments of precious jewelry in 1986.
5/ Compiled from responses of 29 U.S. producers supplying usable income-and-loss data to questionnaires of the U.S. International Trade Commission. These firms together accounted for approximately 23 percent of estimated U.S. producers shipments of precious-metal jewelry in 1986.
6/ Compiled from responses of 4 U.S. producers supplying usable income-and-loss data to questionnaires of the U.S. International Trade Commission. These firms together accounted for approximately 2 percent of estimated U.S. producers shipments of gemstone jewelry in 1986.
7/ Compiled from responses of 31 U.S. producers supplying usable data to questionnaires of the U.S. International Trade Commission. These firms together accounted for approximately 10 percent of estimated U.S. producers shipments of precious jewelry in 1986.
8/ Compiled from responses of 14 U.S. producers supplying usable data to questionnaires of the U.S. International Trade Commission. These firms together accounted for approximately 6 percent of estimated U.S. producers shipments of precious jewelry in 1986.

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1. World markets

- o World imports of precious jewelry grew at an average annual rate of 17 percent compared with a 1 percent rate for all commodities during 1981-85; however, the growth in imports of precious jewelry slowed to only 3 percent in 1985.

The United States increased in importance as the world's largest import market for precious jewelry during 1981-85, the latest year for which comparable data are available. The value of U.S. imports more than doubled from $768 million in 1981 to $1.8 billion in 1985, more than twice that of the second largest importer, Saudi Arabia. The United States' share of total imports rose from 21 percent in 1981 to 41 percent in 1985. Saudi Arabia's share of world imports dropped from 21 percent to 16 percent and that of Switzerland dropped from 18 percent to 13 percent during the period.

The United States also led in import growth by a wide margin, increasing its imports at a 33-percent annual rate from 1981 to 1985. Canada was a distant second, at 14 percent. France, Japan, and Hong Kong were also significant gainers, and those from Saudi Arabia, Switzerland, the United Kingdom, and West Germany were down (pp. 2-1 through 2-4).

2. World suppliers

- o Developed countries retained their position as the major leading world suppliers of precious jewelry products during 1981-85 despite the decline in exports of most countries except Italy; however, exports from Thailand, Hong Kong, and Israel showed the highest growth rates.

In general, the rank order of leading world suppliers of precious jewelry remained largely the same during 1981-85. In 1981, Italy was the leading world supplier of precious jewelry accounting for $1.9 billion, or 48 percent of total world exports. Switzerland followed with $514 million, or 12 percent of world exports, and West Germany was third accounting for $366 million, or 9 percent. The United Kingdom and France were the fourth and fifth largest exporters accounting for 7 percent and 6 percent of total world exports, respectively. By 1985, the ranks of the top three world suppliers remained unchanged, although Italy's share increased and Switzerland's and West Germany's shares declined. The United States, ranked in eighth place and with exports falling each year through 1984, experienced a turnaround in export growth in 1985.

Exports from Thailand, Hong Kong, and Israel showed the greatest rate of growth over the period, increasing 34.9 percent, 13.9 percent, and 8.8 percent per year, respectively (pp. 3-1 through 3-3).

3. U.S. Domestic Market

- o Growth of U.S. precious jewelry consumption was significantly greater than that of per capita personal disposable income during 1982-86. Generally lower and more stable gold prices were the major reasons for the growth in consumption.

Apparent U.S. consumption of precious jewelry increased from $3.7 billion in 1982 to $5.3 billion in 1986, representing a 9.7 percent annual rate compared with a 2.6 percent rate for per capita personal disposable income and a 9 percent rate for all personal consumption expenditures. The portion of total consumption supplied by precious-metal jewelry increased modestly during the period, from 68 percent to 71 percent, as such consumption rose from $2.5 billion in 1982 to $3.8 billion in 1986. Apparent consumption of gemstone jewelry increased less during the period than that of precious-metal jewelry--31 percent overall versus 51 percent. The major reason for the growth in the value of U.S. consumption is the substantial decline in the world price of gold and a consequent reduction in prices for precious jewelry. Most of the increase in consumption has been met by increases in imports.

The demand for jewelry may have fallen somewhat because of reduced speculative demand. However, the demand for gemstone jewelry products appears to have risen because of the change in consumer preferences that began during the period of high gold prices (pp. 4-4 through 4-8).

- o The increasing number of women in the workforce was a major contributing factor in the expansion of the market during 1982-86.

In recent years the increase in demand for precious jewelry has resulted in large part from the increase in the number of women in the workforce, especially in higher paying professional and other white collar occupations. Working women, particularly those in professional jobs, have considerably more disposable income under their own control than nonworking women. Certain styles of precious jewelry are considered an appropriate part of a professional woman's business wardrobe. Women purchase an estimated 87 percent of all precious jewelry in the U.S. market and account for about 89 percent of self purchases of gold jewelry (p. 4-2).

4. U.S. Industry Profile

- o In 1986, the U.S. industry of roughly 2,000 firms consisted mainly of small producers. The 4 largest producers accounted for less than one-fifth of U.S. producers' shipments and the 50 largest, for 47 percent.

Numerous mergers, new entrants, and exits from the industry have taken place in recent years. The Jewelers Board of Trade reports that the number of jewelry manufacturers (including costume jewelry) increased 30 percent from January 1983 to January 1986, the period of the most rapid rise in U.S. apparent consumption. A moderate trend toward decreasing concentration of

precious jewelry production in larger firms has emerged: in 1982, the 4 largest firms accounted for 16 percent of U.S. producers' shipments, down from 18 percent in 1977 and 21 percent in 1972; the 50 largest firms accounted for 47 percent, down from 48 percent in 1977 and 49 percent in 1972. This trend is the reverse of that for all manufacturing, which tended toward greater concentration during the period. Approximately 35 percent of U.S. producers are located in the New York metropolitan area (pp. 5-6 and 5-7).

- o In nominal terms, domestic industry shipments rose by approximately 18 percent during 1982-86, this increase was significantly slower than the respective increases in U.S. apparent consumption and imports. In real terms, shipments rose by 14 percent over that period.

Inflation in precious jewelry prices was significantly lower than that of the overall economy (4 percent versus 14 percent) owing to the decrease in gold prices. Despite the decline in prices, U.S. producers were not able to convert the advantages of home-market growth and its traditional supplier relationships into a comparable rate of growth in industry shipments. With 77 percent of the domestic market in 1982, U.S. producers supplied only one-third of the increase in apparent consumption during the four following years, and importers supplied two-thirds of the increase, cutting U.S. producers' overall market share to 63 percent (pp. 5-7 through 5-10).

- o Precious-metal jewelry accounted for almost two-thirds of U.S. producers' shipments of precious jewelry during 1982-86.

Precious-metal jewelry increased from 61 percent of total industry shipments in 1982 to 64 percent in 1984 and then decreased to 62 percent in 1986, as consumer preference shifted to gemstone jewelry. Of product types, U.S. producers reported concentrating on rings (59 percent of shipments in 1986), earrings (11 percent) and findings (standardized parts) and clasps and 10 percent of shipments in 1986) (pp. 5-7 and 5-10).

- o Industry capacity utilization peaked at 87 percent in 1983 and has since plummetted to 51 percent in 1985.

The trend was opposite that for all miscellaneous manufacturing industries which increased slightly from 61 percent to 63 percent over the period. This drop in utilization can be attributed partly to the increase in the number of firms and some expansion of existing firms (p. 5-7).

- o Distribution channels shifted slightly, with a 4 percent rise in the share of direct sales to retail outlets, largely as a result of increased sales by U.S. producers. This shift may have produced a structural increase in the level of inventories producers need to supply retailers. U.S. importers turned to new methods of distribution, primarily mail-order and television shopping networks, to sell their products.

During 1982-86, increased direct domestic orders by U.S. retailers stimulated an increase in the share of total sales by U.S. producers to such outlets from 68 percent to 76 percent. The ratio of inventory to shipments

rose from 26 percent in 1982 to 28 percent by 1986, representing an opposite trend and almost double the inventory-shipments ratio for all durable goods manufacturers, which fell from 19 percent (1982) to 15 percent (1985). Primarily because of declining orders from retail stores, U.S. importers' share of sales to other retail outlets, including mail-order and television shopping networks, increased from 1 percent to 6 percent (pp. 5-13 and 5-14).

- Total employment fluctuated over the period but overall remained unchanged; the number of production workers fell by 3 percent. As average hourly earnings increased 18 percent and average weekly hours went up slightly, productivity per worker increased by 18 percent.

Although total industry employment rose during 1982-85, a decline in 1986 offset any increase over the period. The overall decline reported for production workers was 2.7 percent. Average hourly earnings in the industry increased 18 percent from 1982 to 1986 (more than the 13.6-percent increase in the Consumer Price Index), from $6.89 to $8.14; the 1986 average is greater than that of $7.54 for workers in all miscellaneous manufactures, and lower than that of $9.73 in all manufacturing. The gain from the 18-percent increase in productivity and the decline in major input costs combined to keep price increases at a modest level during the period (pp. 5-16 through 5-18).

5. Levels and Trends in U.S. International Trade

- The depreciation of the dollar during 1985-86 benefited U.S. exports of precious jewelry. Export levels showed some deterioration during 1982-84 with the ratio of exports to producers' shipments declining from 3.9 percent to 2.7 percent. However, during 1985-86, as the dollar declined, exports increased at an annual average rate of 28 percent and the ratio of exports to producers' shipments rose to 4.3 percent in 1986.

Exports declined by 17 percent, from $114 million in 1982 to $95 million in 1984, mainly because of the strength of the dollar vis-a-vis foreign currencies and relatively volatile gold prices. However, by 1986, as the dollar weakened and gold prices stabilized, exports recovered to $148 million and their share of producer shipments rose to 4.3 percent. Switzerland, the Dominican Republic, and Japan were the leading U. S. export markets, respectively accounting for 36, 15, and 10 percent of U.S. exports in 1986 (pp. 6-1 and 6-2).

- Although precious-metal jewelry imports expanded 132 percent from 1982 to 1986 (23.4-percent annual rate), imports of gemstone jewelry rose by 246.8 percent (36.5-percent annual rate); the bulk of these increases occurred during 1982-85. Imports from developing countries under The Generalized System of Preferences (GSP) accounted for 18 percent of precious-metal jewelry imports and 28 percent of gemstone jewelry imports in 1986.

Although total imports of precious-metal jewelry more than doubled, from $857 million in 1982 to $1.7 billion in 1986, those of gemstone jewelry more

than tripled from $79 million to $274 million. The increase in imports of gemstone jewelry, mainly from Thailand, reflected a shift in consumer preferences during 1982-85 away from pieces with higher gold content, and from diamonds, to more competitively priced pieces containing colored gemstones.

The share of GSP imports to total imports for precious-metal jewelry fluctuated over the period between 15 percent and 19 percent, but overall, it increased only 1 percent because of reductions in GSP eligibility and increased usage of other preferential tariff programs, primarily by Israel and the Dominican Republic. However, the relative GSP share for gemstone jewelry increased annually from 13 percent in 1982 to 28 percent in 1986 (pp. 6-2 through 6-7).

- o U.S. imports under the GSP program more than doubled during the period and accounted for less than one-fifth of all precious jewelry imports. The top three GSP suppliers accounted for 66 percent of total GSP imports in 1986.

U.S. imports under the GSP increased from $141 million in 1982 to $381 million in 1986. Imports from the five leading suppliers of precious jewelry under the GSP program accounted for an average of 91 percent of total precious jewelry imports from those countries in 1986. GSP imports from Thailand, the leading supplier under the program, increased more than fourteenfold, from $7 million in 1982 to $107 million in 1986. GSP imports from Israel, the second leading supplier under the GSP program, increased 7 percent, from $89 million in 1982 to $96 million in 1986. Imports from Peru, the third largest supplier under the program, more than doubled from $16 million to $47 million (pp. 6-18 through 6-23).

- o The ratio of imports to apparent consumption of precious jewelry decreased slightly from 1982 to 1983, but increased over the rest of the period, to a 37.4-percent import-penetration ratio overall.

The deficit balance in U.S.-jewelry foreign trade more than doubled over the 4 years, from $742 million in 1982 to $1.8 billion in 1986, equivalent to more than one-half of 1986 U.S. shipments. The rapid expansion of imports reflects annual increases of 22 percent compared with annual increases of less than 5 percent in U.S. producers' shipments. The increase in import penetration primarily resulted from the decline in gold prices over the period which increased the advantage held by foreign suppliers in other cost factors.

The appreciation of the dollar during most of the study period, and an increase in precious jewelry imports receiving GSP and other preferential benefits, also contributed to increased import penetration (pp. 4-4 through 4-8 and 6-18 through 6-24).

6. Leading Competitive Factors

- o Domestically produced precious jewelry was reported to hold a competitive advantage in the U.S. market with respect to marketing factors, product quality, and an ability to supply products at various price levels.

Questionnaire responses indicated that domestic producers were rated higher than foreign producers in all marketing factors. Domestic producers

were rated highest in an ability to deliver products in a shorter time, in historical supplier/buyer relationships, and in overall product availability. In terms of product quality, domestic producers were rated better than foreign producers, but to a lesser degree than in the factors cited above. The perceived advantage held by domestically produced precious-metal products was less than that for gemstone jewelry products in each of the factors favoring domestic products (pp. 7-1 through 7-3).

- o Imported products are perceived to hold a competitive price advantage mainly because of lower labor costs. Competitive advantages from material costs, exchange rates, and other pricing factors were inconclusive.

Forty-six percent of all responses to Commission questionnaires indicated that foreign-made products held a current competitive advantage in the U.S. market on the basis of price and 28 percent indicated that neither domestic nor foreign products held a competitive advantage. Approximately two-thirds of U.S. producers and importers surveyed indicated foreign-produced products held a price advantage; however, two-thirds of purchasers surveyed indicated that domestically produced products were lower priced.

U.S. producers and importers indicated that the perceived pricing advantage was the result of lower labor costs. Approximately 60 percent of each group indicated that neither domestically produced nor imported products held an advantage due to lower material costs. Sixty percent of producers indicated that foreign products held an exchange-rate advantage, but 39 percent of importers indicated that there was no clear advantage to either foreign or domestic producers. Similarly, responses regarding other pricing factors were inconclusive as producers indicated that foreign products held an advantage and importers indicated domestic products held the advantage (pp. 7-10 through 7-12).

- o Promotional incentives, aimed at retailers, are generally considered to be an important factor of competition.

Most questionnaire respondents reported that after price, promotional incentives, such as cooperative advertising, are the most important factors in competition among domestic suppliers offering precious jewelry. Other incentive programs, such as in-store sales support services, point-of-sale promotions, and training for store personnel, are also popular. Most imported products are not supported by such incentive programs or are supported to a limited degree. However, in general, the price advantage enjoyed by imported products reportedly offset any advantage resulting from promotional incentives (pp. 7-22 and 7-23).

7. Tariff and Nontariff Barriers

- o Preferential duty rates play a minor role in the international trade of precious jewelry because most major suppliers are developed nations; however, they are important when these countries compete with developing nations in third-country markets.

Preferential duty rates play a minor role in the international trade of precious jewelry since most major world suppliers of precious jewelry products are developed countries. Preferential duty rates are important to developing nations since they permit these countries to expand their exports. Therefore, for precious jewelry products other than chain, developed country industries compete on such nonprice factors as quality, design, and delivery time (pp. 8-3 through 8-5).

- o Differing national marking requirements are reported to be the most significant nontariff barriers affecting the international trade of precious jewelry.

An indication of the country of origin must be marked on precious jewelry articles in all major markets. In addition, for precious jewelry, most markets require a marking that indicates the fineness of metal alloy used in production. However, there is no universal technical terminology or standard for such markings. According to a substantial number of questionnaire respondents, this lack of commonality tends to inhibit the flow of trade, by causing additional costs, both direct and indirect, in meeting various national standards. Other nontariff barriers reportedly include import-licensing requirements, arbitrary scrutiny for compliance with local precious-metal content markings in certain markets, and alleged direct or indirect government assistance to industries (pp. 8-5 through 8-7).

8. Product Standards and Marking Regulations

- o Industry representatives allege that country-of-origin marking requirements related to imported precious jewelry are not effectively enforced after products move through U.S. Customs.

A substantial number of questionnaire responses indicated that imported precious jewelry is often not properly marked when it reaches the ultimate consumer. Existing U.S. Customs regulations permit country-of-origin markings on certain articles of imported jewelry to be made with gummed stick-on labels. U.S. industry representatives allege that many such labels are later removed, so that consumers have no ready means to discern whether an item is domestically produced or imported. A 1986 study conducted by Customs on more than 3,000 entries of jewelry products indicated that, at the point of entry, some 21 percent did not have proper country-of-origin markings (pp. 9-1 and 9-2).

9. Financial Experience and Investment Responses of U.S. Producers

- o The profitability of U.S. producers of precious jewelry increased during 1983-85, then declined in 1986 because of an increase in costs.

Net sales of precious jewelry by U.S. producers, based on usable income-and-loss data of 35 questionnaire respondents, increased at an average annual rate of 6.1 percent during 1982-86, with the largest increase (10.7 percent) occurring during 1985-86. Total costs of goods sold kept pace at an average annual rate of 6.2 percent, but with a spurt to 14.8 percent during 1985-86. Similarly, general, selling, and administrative costs increased at an average annual rate of 7.0 percent during the period, but also jumped to 11.3 percent in 1985-86. Therefore, the profitability of such firms, measured by net income before taxes, declined at an average annual rate of -4.7 percent with the largest drop, other than in 1983, occurring in 1985-86 (-33.8 percent). The ratio of net income before taxes to net sales varied considerably during the period, from a low of 1.2 percent in 1983 to a high of 5.2 percent in 1985. The ratio declined in 1986 (pp. 10-1 through 10-4).

- o There was substantial investment by U.S. producers in pollution control equipment in 1985 as many U.S. producers brought their plants into compliance with Federal standards for wastewater discharge regulations; however, the bulk of capital expenditures over the period was on machinery and equipment.

Capital expenditures of 31 U.S. producers of precious jewelry increased from $8 million in 1982 to $11 million in 1986, but remained at about 3 percent of net sales during the period. Discharges of certain metals and hazardous materials into bodies of water are restricted, under regulations issued by the Environmental Protection Agency (EPA) that became effective in 1984. Many local governments have also established water pollution standards, some of which are more stringent than Federal standards. These regulations directly affect precious jewelry producers because most precious jewelry is finished with a thin electroplating. Further, according to industry sources, under guidelines established by the Occupational Safety and Health Administration (OSHA), domestic producers invested heavily in other equipment to provide a safe working environment for employees. However, judging from profit-and-loss data from the Commission's questionnaires, such investments did not cause a net decrease in profitability in the industry below levels of prior years.

Based on discussions with representatives from industries in Italy and Hong Kong, similar environmental regulations exist in those countries; however, they report enforcement to be less stringent (pp. 10-9 and 10-10).

10. The Competitive Outlook for the U.S. Industry

- o The basis for competitiveness of precious-metal and gemstone products differ, and the U.S. industry faces at least two distinct trends that control international competition, one involving precious-metal jewelry and one involving gemstone jewelry.

In precious-metal jewelry, the U.S. industry competes on the basis of quality and marketability of products. Foreign competition, principally chain from Italy, is based on price. The price competition is heavily influenced by gold prices, which affect product demand, and exchange-rate fluctuations, which affect the relative price of finished products. In the precious metal chain segment of the market, there is some evidence of an increasing consumer preference for lower priced imported chain, as shown by an increase in the import penetration ratio for chain from about 64 percent to about 69 percent during 1982-86. Although imports from Italy dominate the machine-made gold-chain market in the United States, as long as current exchange rate and gold price trends continue, domestically produced chain becomes more competitive. For success in foreign markets, U.S. producers must make a special effort to market their products aggressively and to ensure that they are within established precious-metal quality and tolerance limits.

With respect to gemstone products, U.S. producers once held an advantage because the product was dependent on highly-skilled craftsmen. The development and upgrading of industries in former raw-material-supplying countries is increasing competition from developing countries where lower labor costs, improving craftsmanship, and, in most major markets, preferential duty rates, now combine to give such countries a price advantage. The interaction between these direct cost advantages, combined with demand for specific types of products, determines U.S. competitiveness. These factors appear to forecast greater competition for gemstone jewelry in the United States and possibly will prevent the expansion of U.S. exports in third-country markets (ch. 11).

Chapter 1. Product Description and Uses

Jewelry includes any articles of personal adornment, such as rings, bracelets, earrings, pendants, and necklaces. These articles can be made of precious or nonprecious materials and are often set with natural, synthetic, or imitation stones, or natural, cultured, or imitation pearls. Precious or fine jewelry is generally considered to be made in chief value of any precious metal 1/ or gemstone 2/, whether precious or semiprecious, used in combination with precious metal. Precious metal can be either set or unset with precious or semiprecious gemstones, or natural or cultured pearls, or used in a part of the finished article such as the clasp. The price of precious jewelry is generally moderate to high and determined primarily by the price of input materials.

Precious jewelry can be separated into that which is highly fashion oriented and generally original in design, and that which is a higher priced imitation of popular costume jewelry designs. Karat gold 3/ is the most common component material of chief value in precious jewelry, although other materials, such as diamonds and colored gemstones, are the component material of chief value in some articles. Products that are made wholly or almost wholly of precious metal are usually the lowest priced precious jewelry products, unless they incorporate fancy designs either by etching, engraving, or other similar process. Neck chains, bracelets, and wedding bands are the most common precious-metal products. High-fashion articles are generally rings, pendants, brooches, and earrings; these goods are usually set with or include gemstones.

1/ For purposes of this study, the term "precious metal" includes gold, silver, platinum, and other metals of the platinum group (iridium, osmium, palladium, rhodium, and ruthenium), precious metal alloys, and "filled" precious metals. The term "filled" refers to a precious metal with a plating by soldering, brazing, welding or other mechanical means, of gold alloy not less than 10 karat fineness, when the plating constitutes at least 1/20th of the weight of the metal in the entire article. A discussion of the impact of the precious metals industry on jewelry manufacturing can be found in app. D.

2/ The term "gemstone" refers to a naturally occurring mineral that has been prepared for use in jewelry. Gemstones are generally categorized as those which are precious, including diamonds, rubies, emeralds, sapphires, and natural pearls, and those which are semiprecious, including tanzanite, tourmaline, garnet, topaz, amethyst, and chrysoprase, among others. Semiprecious gemstones are regarded as such because of one or more of the following reasons; their relative softness, inferior brilliance, comparative abundance, or fashion, and can vary widely in price and quality. Other stones are also used in precious jewelry, however, they are too numerous to list here. It should be noted that natural pearls are considered gemstones, but cultured pearls (those whose nucleus is artificially implanted) are not. Thus, references to pearls are meant to include only natural pearls. A discussion of the impact of the gemstone industry on jewelry manufacturing can be found in app. D.

3/ Karat is the unit for measuring the fineness of gold, pure gold being 24 karats. Hereinafter, abbreviated references to karatage will be designated by "K." This should not be confused with the "carat" which is the weight measurement of gemstones.

For purposes of this investigation, precious jewelry includes any object of personal adornment and small articles ordinarily carried in the pocket, in the handbag, or on the person for personal convenience; and parts, in chief value of any precious material including precious metals, gemstones, natural pearls, or precious metal set with gemstones, cameos, intaglios, amber, or coral, or any combination thereof. Specific materials commonly used in precious jewelry are varying karatages of gold, silver, gold or silver "filled" metals, diamonds, pearls, colored gemstones (such as rubies, sapphires, and emeralds), and semiprecious stones (such as amethyst, garnet, tanzanite, topaz, and tourmaline), among others.

Typical articles of jewelry and personal adornment include rings, earrings and clips, bracelets (including fashion, identification, and watch), necklaces, neck chains, watch chains, key rings and chains, brooches, cuff links, collar pins and clips, tie pins and clips, dress-studs, medals, fobs, pendants, military, fraternal, and similar emblems, and chain, provided it is produced in continuous lengths, made of precious metal. Also included are insignia and religious articles (including rosaries, chaplets, crucifixes, and medals) of a purely devotional character, if they are made of the materials described above. The so-called small articles ordinarily carried on the person include cigar and cigarette cases and holders, spectacle cases, coin purses, card cases, pocket combs, powder boxes, lipstick holders, money clips, and similar articles.

According to information supplied by the International Gold Corp., an average of 29 percent of gold jewelry purchases in world markets are for no special occasion. However, almost two-thirds are purchased for gift purposes. Three-fourths of those gifts on average are for women. Women also account for an estimated 74 percent of self-purchased gold jewelry items. The most important gift-giving occasion is Christmas, for which an average of 21 percent of purchases were made, followed closely by birthdays with 20 percent. Appendix E contains tables that indicate the distribution of gold jewelry purchases by reason, purpose, and occasion in selected world markets.

All articles classified as jewelry and parts thereof under the Tariff Schedules of the United States (TSUS), made of, or containing, the required precious materials, have been included in this study. For simplification, the words precious and fine are hereinafter used interchangeably and all references to precious or fine jewelry shall include component parts for such articles, except as noted. For purposes of the investigation we have provided analysis throughout the report on the basis of major product categories. All references to product groupings refer to those defined below, except as noted:

- o Rings - Jewelry in the form of a circlet worn on any of the fingers. This includes those used as fraternal, college, school, wedding, and other special occasion rings, and also any used as mountings for stones.

- o Neckwear - This item includes a string of jewels, beads or the like, or a metal band or chain worn around the neck. It also includes all chains that are used to suspend a pendant, locket or other ornament.

- o Earrings - An ornament that attaches to the lobe of the ear by a small screw, clip, or by a wire piercing the ear.

- o Religious articles - A class of objects made to be worn combining religious uses with artistic beauty. Included here are rosaries, medals, crucifixes, and chaplets of a purely devotional character.

- o Findings - Standardized parts for jewelry, marketed for use in manufacturing or repair work. This includes items such as points, pins, spring rings, ring blanks, and other unassembled parts.

- o Clasps - An attachment used to connect the two ends of a neck chain, necklace, bracelet, or similar piece of jewelry.

- o Other jewelry articles - Included here are all other articles of jewelry and personal adornment such as bracelets (including fashion, identification, and watch), brooches, tie pins and clips, coin purses, collar pins and clips, key chains, cuff links, medals, money clips, emblems, insignia, and pendants.

Chapter 2. World Markets

After trading places with Saudi Arabia as the world's top importer of precious jewelry in 1983, the United States became the single most important world market as U.S. imports nearly doubled during 1983-85, rising to $1.8 billion, or 41 percent of world imports in 1985. The 23-percent annual growth in U.S. imports during 1981-85 brought about an overall annual increase of 5 percent for world imports. Largely the result of an increase in the supply of jewelry due to the decline in the price of gold, U.S. import demand was also stimulated by the weakness of the U.S. dollar during most of the period. Table 2-1 lists the top 10 importers of precious jewelry during 1981-85 and their respective shares in 1985. Figure 2-1 provides a comparison

Table 2-1
Precious jewelry: Top 10 world importers' imports, 1981-85, share of world imports, and share of U.S. exports to each market, 1985

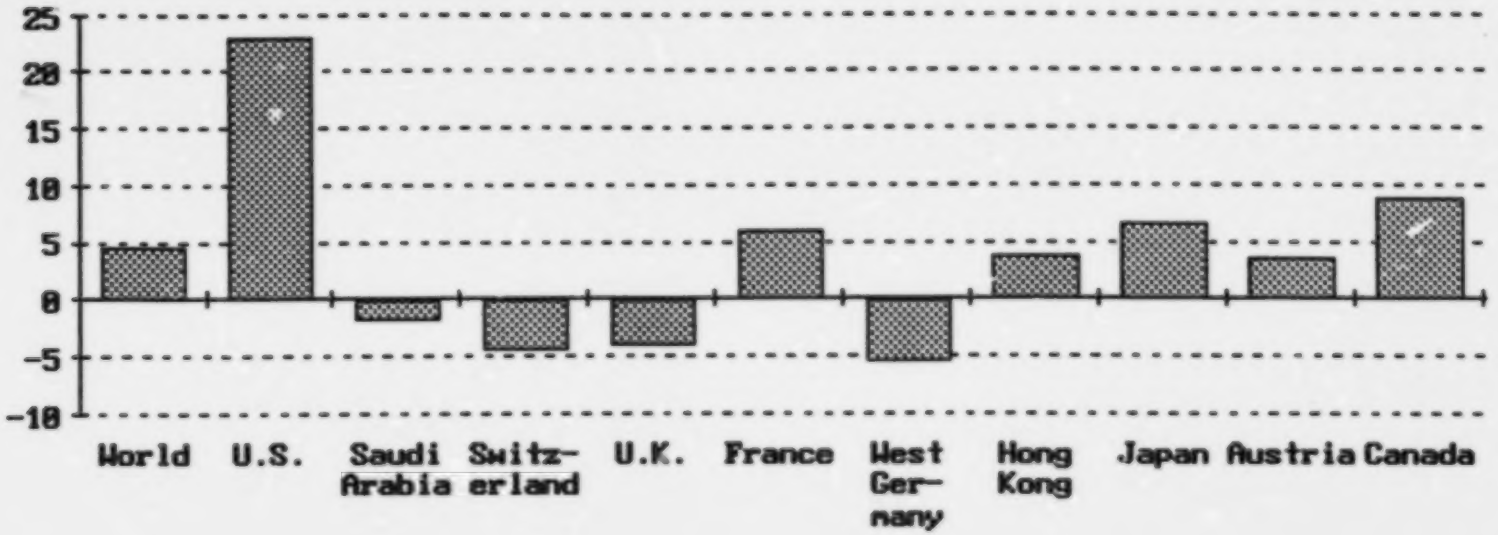
Country	1981	1982	1983	1984	1985	Share of world total, 1985	Change, 1985 from 1981	Share of U.S. exports, 1985
	1,000 dollars					Percent		
United States...	767,156	890,755	909,413	1,229,500	1,766,330	41.0	130.2	-
Saudi Arabia...	748,928	876,851	912,154	945,587	696,171	16.1	-7.0	0.1
Switzerland.....	656,372	526,563	537,943	697,400	548,603	12.7	-16.4	41.0
United Kingdom..	363,203	376,586	416,154	538,079	308,320	7.1	-15.1	2.0
France.....	111,237	109,236	129,207	145,311	141,559	3.3	27.3	9.1
West Germany..	170,688	142,444	162,316	151,615	137,102	3.2	-19.7	1.8
Hong Kong..	108,343	119,695	92,462	103,638	126,811	2.9	17.0	3.8
Japan.....	94,878	113,604	112,889	104,442	123,599	2.9	30.3	7.7
Austria....	49,749	50,546	66,589	59,904	57,490	1.3	15.6	1/
Canada.....	30,756	20,936	28,865	33,901	43,183	1.0	40.4	3.6
World total....	3,582,238	3,714,351	3,630,056	4,348,750	4,313,010	100.0	20.4	100.0

1/ Less than 0.05 percent.

Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

Figure 2-1
Precious jewelry: Average annual rates of growth in world imports of major markets, 1981-85

Percent



Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

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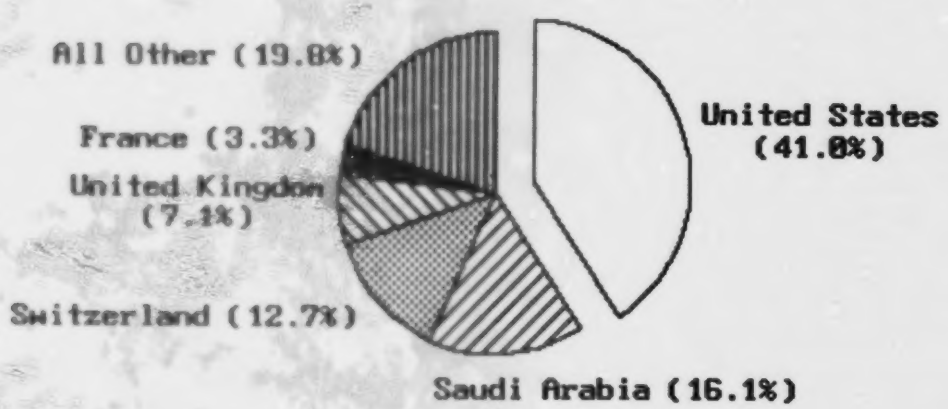
of the average annual change in imports of precious jewelry by each of these countries.

Figure 2-2 illustrates the relative country shares of the major world importers during 1985. Saudi Arabia, a very close second to the United States in 1981 and 1982 and the largest importer in 1983, had ebbed in importance as a market by 1985, when Saudi imports accounted for 16 percent of the world total. Lessened oil revenues caused this sharp reversal in precious jewelry purchases, which are used by Saudis as a store of wealth.

Figure 2-2
Precious jewelry: Major world importers, 1985



Imports by only three other top 10 markets, Canada, Japan, and France, grew at a pace exceeding the average; and in all 3 cases the growth was less than 10 percent per annum. Of the remaining top 10 markets, 3 in addition to Saudi Arabia experienced net decreases in imports of precious jewelry during 1981-85; and imports by 2 of these, Switzerland and the United Kingdom, actually peaked in 1984. Switzerland, the United Kingdom, and West Germany, together accounted for 23 percent of world imports in 1985 and experienced. An apparent trend in all major world markets has been an increase in imports of gemstone jewelry. Based on information supplied by the International Gold Corp., neckwear, rings, and earrings are the most popular articles in most markets. 1/ The U.S. market will be discussed in greater detail following this section.

1/ App. F lists the distribution of gold jewelry purchases in selected world markets, by products.

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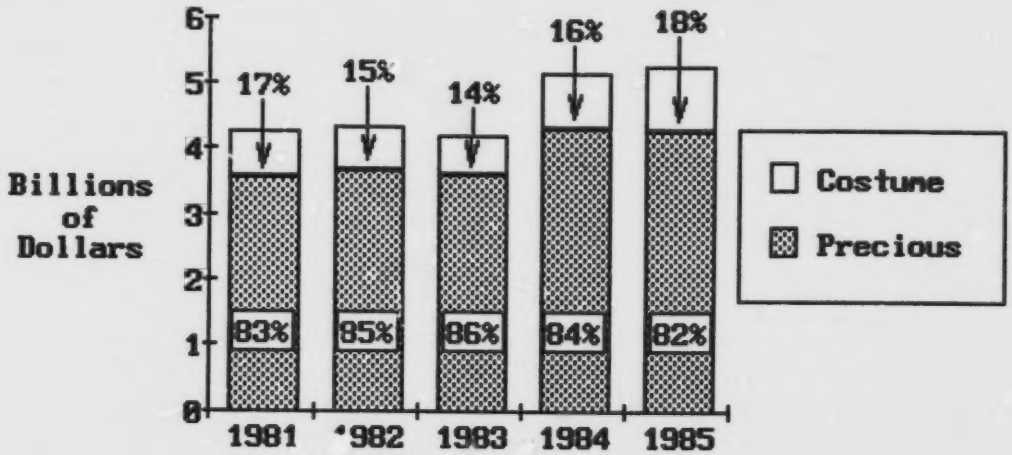
In 1985, world imports of all jewelry increased at an average annual rate of 5.3 percent and amounted to $5.3 billion. However, world imports of precious jewelry, which accounted for more than 80 percent of the total value in each year, underperformed costume jewelry with a 4.8-percent average annual increase versus 8.1 percent for costume. Figure 2-3 displays the relative share of the value of total jewelry imports accounted for by precious jewelry. Imports of all jewelry into the United States, the world's largest market, increased an average of 24 percent per year during 1981-85 and amounted to $2.3 billion in 1985, 43 percent of the world total. For further detail on the importance of precious jewelry to the world jewelry trade, see app. G.

Figure 2-3
All jewelry: World imports, by type, 1981-85



Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

Of total precious jewelry, precious-metal jewelry imports accounted for an average of 89 percent of total world imports during 1981-85, and the leading markets for precious-metal jewelry were the same as those for all precious jewelry (fig. 2-4 and table 2-2). U.S. precious-metal jewelry imports rose an average of 23 percent per annum to reach $1.5 billion in 1985, or 40 percent of world imports (table 2-2). The second leading market, Saudi Arabia, imported just over 40 percent, of the value of U.S. imports in 1985 and accounted for $628 million, or 16 percent, of the world's total. Other leaders, Switzerland, the United Kingdom, and West Germany, all experienced declines in their respective imports of at least 15 percent for the whole period. Other than the United States, France was the only other top five importer of precious-metal jewelry to register an increase during the period (30 percent), from $102 million in 1981 to $132 million in 1985.

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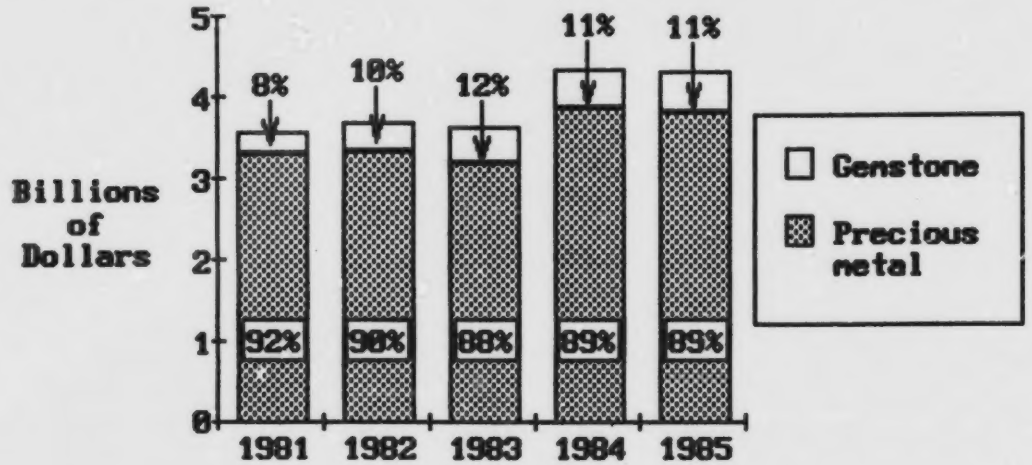
Figure 2-4
Precious jewelry: World imports, by material, 1981-85



Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

Table 2-2
Precious-metal jewelry: Top 10 world importers' imports, 1981-85, share of world imports, and share of U.S. exports to each market, 1985

Country	1981	1982	1983	1984	1985	Share of world total, 1985	Change, 1985 from 1981	Share of U.S. exports, 1985
	1,000 dollars					Percent		
United States....	685,403	802,171	800,339	1,060,914	1,543,840	40.3	125.2	-
Saudi Arabia....	654,105	696,558	674,695	798,812	628,330	16.4	-3.9	0.1
Switzerland.....	641,054	513,938	517,916	682,227	531,262	13.9	-17.1	10.5
United Kingdom...	356,904	370,419	411,016	530,145	301,555	7.9	-15.5	3.1
France.....	101,960	100,746	121,258	138,033	132,115	3.5	29.6	3.0
West Germany...	164,327	138,436	157,390	146,984	129,348	3.4	-21.3	2.7
Hong Kong...	96,258	111,296	84,266	95,253	115,124	3.0	19.6	5.4
Japan.....	80,552	101,289	97,710	86,089	99,748	2.6	23.8	14.3
Austria.....	47,150	48,646	64,198	57,306	54,551	1.4	15.7	1/
Canada.....	29,891	20,609	27,131	30,459	40,105	1.0	34.2	6.7
World total.....	3,309,450	3,348,561	3,187,266	3,878,255	3,829,182	100.0	1[illegible]7	100.0

1/ Less than 0.05 percent.

Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

The United States became the world's largest import market for gemstone jewelry in 1984. During 1981-84, U.S. imports increased an average of 28 percent annually while Saudi Arabian imports declined an average of 8 percent annually (table 2-3). In 1985, U.S. imports were three times that of Saudi Arabia, $222 million compared with $68 million. U.S. imports rose

Table 2-3
Gemstone jewelry: Top 10 world importers' imports, 1981-85, share of world imports, and share of U.S. exports to each market, 1985

Country	1981	1982	1983	1984	1985	Share of world total, 1985	Change, 1985 from 1981	Share of U.S. exports, 1985
	1,000 dollars					Percent		
United States	81,753	88,584	109,074	168,586	222,490	46.0	172.1	-
Saudi Arabia	94,823	180,293	237,459	146,775	67,841	14.0	-28.4	1/
Japan	14,326	12,316	15,179	18,353	23,851	4.9	66.5	1.1
Switzerland	15,318	12,625	20,027	15,173	17,341	3.6	13.2	71.3
Hong Kong	12,085	8,399	8,196	8,385	11,687	2.4	-3.3	2.3
France	9,277	8,490	7,949	7,278	9,444	2.0	1.8	15.2
West Germany	6,361	4,008	4,926	4,631	7,754	1.6	21.9	.9
United Kingdom	6,299	6,167	5,138	7,934	6,765	1.4	7.4	1.0
Canada	865	327	1,734	3,442	3,078	.6	255.8	.6
Spain	964	823	781	845	992	.2	2.9	1/
World total	272,788	365,790	442,790	470,495	483,828	100.0	77.4	100.0

1/ Less than 0.05 percent.

Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

172 percent during the period and accounted for 46 percent of total world imports in 1985. In comparison, Saudi Arabian imports rose sharply from 1981 through 1985, or 47 percent per annum, to register an overall decline of 28 percent during 1981-85. Japan, Switzerland, and Hong Kong were the third, fourth, and fifth largest markets in 1985, accounting for 5 percent, to 1983, when they peaked at $237 million, and then plummeted by 71 percent 4 percent, and 2 percent of total world imports, respectively.

2.1. Saudi Arabia

Saudi Arabian imports of precious jewelry rose annually from 1981 to 1984 and then dropped significantly in 1985, representing a decrease of 7 percent overall for the period. In 1985, Saudi Arabia accounted for 16 percent of world imports. According to the latest available statistics, Italy was the leading supplier of precious jewelry to Saudi Arabia in 1982, accounting for over one-half of total imports. Bahrain, Lebanon, and Singapore were also

major suppliers of precious jewelry to Saudi Arabia. Imports from the United States amounted to $83,000 in 1985, as the United States was the 12th ranked supplier to Saudi Arabia. Precious-metal, principally gold, jewelry accounted for an average of over 80 percent of total precious jewelry imports during the period. Statistics on the principal gold products imported by Saudi Arabia are not available.

Industry sources indicate that the Saudis have an historical and cultural desire to hold their wealth in gold. They import gold jewelry in order to invest in the gold content of the article, as a haven for their wealth. Therefore, Saudi Arabian imports of precious jewelry closely follow the trend in oil prices, their principal export commodity and source of wealth. Average oil prices for Saudi Arabian crude oil declined steadily during 1982-85 and precious jewelry imports followed a similar pattern. The increase in imports in 1984 can be attributed to an increase in oil revenues, which resulted from accelerated economic growth worldwide, and an ancillary rise in world energy demand, some of which was supplied by Saudi Arabia.

2.2. Switzerland

Swiss imports of precious jewelry rose 6 percent from 1981 to 1984 and then declined 21 percent between 1984 and 1985. Imports by Switzerland accounted for 13 percent of total world imports in 1985. According to the latest available statistics, the precious-metal share of jewelry imports decreased from 98 percent in 1981 to 97 percent in 1985. In absolute terms, the value of precious-metal jewelry declined 17 percent during the period. Of the total value of precious-metal jewelry imports, over 90 percent was made of gold (only 18 or higher karat gold jewelry may be sold legally in Switzerland); 2 percent was made of silver; and the remainder was jewelry made of filled metals. In 1985, France, Italy, and West Germany were recorded as the leading suppliers of precious-metal jewelry, accounting for 18 percent, 17 percent, and 17 percent, respectively. 1/ Imports from France declined 49 percent during 1981-85 and those from Italy and West Germany rose 5 and 11 percent, respectively. West Germany was the leading supplier of gemstone jewelry, accounting for 26 percent in 1985. The United States was ranked fifth and accounted for 11 percent of total imports.

The United States was the sixth largest supplier in 1981 and accounted for $45 million, or 7 percent, of total Swiss precious jewelry imports. Following a 45-percent drop in imports through 1983, such imports from the United States increased an average of 16 percent per year to regain the $45 million level in 1985. According to U.S. export statistics, the share of exports to Switzerland accounted for by gemstone jewelry increased from 83 percent in 1981 to 90 percent in 1983, and after a brief decline to 80 percent in 1984, rose to 87 percent in 1985. Saudi Arabia and Panama were among other countries whose supply of precious jewelry to Switzerland dropped significantly during the period.

1/ It should be noted that Swiss trade statistics do not provide accurate information for analytical purposes because they include the movement of temporarily imported jewelry through major auction houses in Geneva and Zurich. Swiss industry sources believe the order of importance of major suppliers to be, Italy (30 percent), West Germany (20 percent), with France as a distant third.

2.3. United Kingdom

United Kingdom imports of precious jewelry increased 48 percent during 1981-84 and then declined 43 percent in 1985 to $308 million. Overall such imports decreased 4 percent per annum, from 1981 to 1985, when they accounted for 7 percent of world imports. The relative share of imports of precious-metal jewelry remained relatively constant at approximately 98 percent during 1981-85. Imports from Italy, the leading supplier of precious jewelry to the United Kingdom, increased its share of the market from 23 percent in 1981 to 28 percent in 1985. Ninety-seven percent of such imports from Italy were gold jewelry, believed to be neckwear. Switzerland and Singapore were the second and third leading suppliers of precious jewelry in 1985. The leading supplier of gemstone jewelry to the United Kingdom in 1985 was Switzerland.

Imports from the United States fluctuated during the period but dropped 54 percent overall, or 17 percent per annum, from $38 million in 1981 to $18 million in 1985. In that year, the United States accounted for 6 percent of total United Kingdom precious jewelry imports. According to U.S. export statistics, the share of precious-metal to total jewelry imports from the United States rose from 58 percent in 1981 to 76 percent in 1985.

2.4. France

French imports of precious jewelry rose 31 percent during 1981-84 and then dropped 3 percent in 1985, when they accounted for 3 percent of world imports. The share of total precious jewelry imports accounted for by precious-metal jewelry was essentially static during 1981-85--about 92 percent. The relative share of gold products to total precious-metal products increased from 81 percent in 1981 to approximately 85 percent in 1985, and that of silver decreased from 14 percent to 13 percent. Switzerland was the leading supplier of precious jewelry to France in 1985, approximately 95 percent precious metal, and accounted for 35 percent of total French precious jewelry imports. Italy was the second leading supplier, accounting for 26 percent. Hong Kong was the leading supplier of gemstone jewelry, accounting for 18 percent of the total.

The United States was the seventh largest supplier of precious jewelry to France in 1981, accounting for $5 million, or 4 percent, of total precious jewelry imports. Whereas the absolute value of imports from the United States fluctuated during the period, the relative share and position of the United States dropped to 2 percent and ninth place, respectively, in 1985. According to U.S. export statistics, the relative share of total imports from the United States accounted for by precious-metal jewelry increased from 37 percent in 1981 to 48 percent in 1984, and then dropped to 16 percent in 1985.

2.5. West Germany

West German imports of precious jewelry dropped 20 percent (5 percent per annum) during 1981-85, when they amounted to $137 million. The share of total imports accounted for by precious-metal jewelry rose from 96 percent in 1981 to 97 percent during 1982-84, and then dropped to 94 percent in 1985. Of precious-metal jewelry imports, the share accounted for by gold rose from

72 percent to 80 percent, that of silver dropped from 27 percent to 19 percent, and that of filled metals remained at approximately 1 percent during the period. Italy was the leading supplier of precious jewelry during the period as it's share of total imports rose from 43 percent in 1981 to 47 percent in 1982, and then returned to 43 percent in 1985. Thailand was the second leading supplier in 1985, accounting for approximately 7 percent of total imports.

Imports from the United States dropped from $8.5 million in 1981, or 5 percent of the total, to $3 million in 1982, or 2 percent of the total. Such imports then rose to $4 million during 1983-84 and then dropped to $3 million, or 2 percent, in 1985. The United States fell from the 6th leading supplier in 1981 to 10th in 1985. Approximately 75 percent of imports from the United States in 1985 were made of precious metal.

Chapter 3. World Suppliers

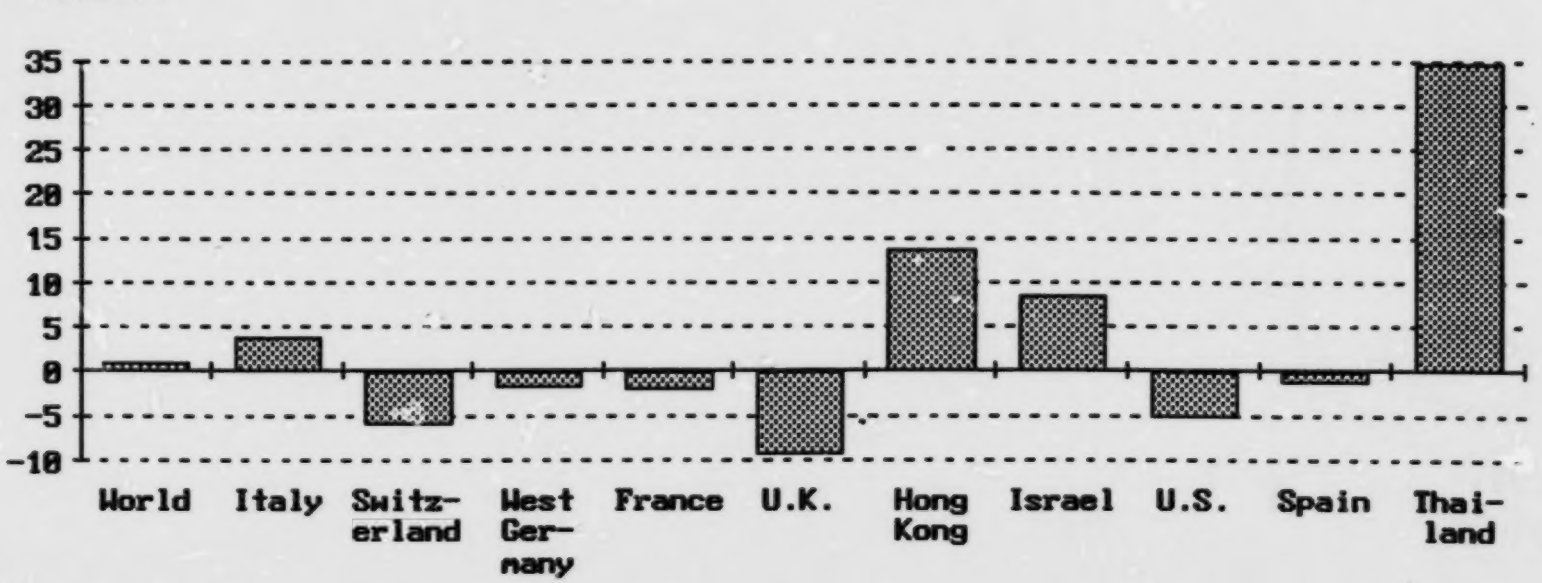
Although total world exports of precious jewelry increased only 5 percent during 1981-85, certain suppliers did far better, and success in the U.S. market was the primary determinant for individual country growth in exports. With the exception of Thailand, only those top 10 exporters that are major suppliers to the U.S. market registered increases in exports during 1981-85 (table 3-1). Furthermore, of the top 10 exporting countries that were major suppliers to the United States, only Switzerland registered a decrease in world exports, and that occurred after a peak in Swiss exports in 1984. The other four major U.S. suppliers, Italy, Hong Kong, Israel, and Thailand, experienced average annual rates of export growth of 4 percent, 14 percent, 9 percent, and 35 percent, respectively (fig. 3-1).

Table 3-1
Precious jewelry: Top 10 world exporters' exports, 1981-85, share of world exports, and share of U.S. imports from each supplier, 1985

Country	1981	1982	1983	1984	1985	Share of world total, 1985	Change, 1985 from 1981	Share of U.S. imports, 1985
	1,000 dollars					Percent		
Italy.....	1,940,481	2,279,225	1,873,852	2,186,257	2,291,042	53.7	17.6	58.2
Switzerland.....	514,136	475,487	443,116	552,723	402,838	9.4	-21.6	5.3
West Germany..	366,108	358,217	342,857	324,859	341,255	8.0	-6.8	1.8
France.....	257,884	219,092	215,228	266,710	239,244	5.6	-7.2	1.2
United Kingdom..	298,478	233,414	367,615	448,323	202,818	4.8	-32.1	0.7
Hong Kong..	111,754	133,950	141,574	181,318	188,398	4.4	68.6	8.8
Israel.....	110,521	113,155	121,322	138,498	154,763	3.6	40.0	7.9
United States...	157,764	129,928	129,337	116,806	127,359	3.0	-19.3	--
Spain.....	88,138	87,072	101,051	89,730	83,596	2.0	-5.2	1.6
Thailand...	24,164	25,276	44,702	53,045	79,916	1.9	230.7	2.5
World total....	4,072,133	4,271,147	3,978,297	4,551,574	4,267,566	100.0	4.8	100.0

Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

Figure 3-1
Precious jewelry: Average annual rates of growth in world exports fron major suppliers, 1981-85



Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

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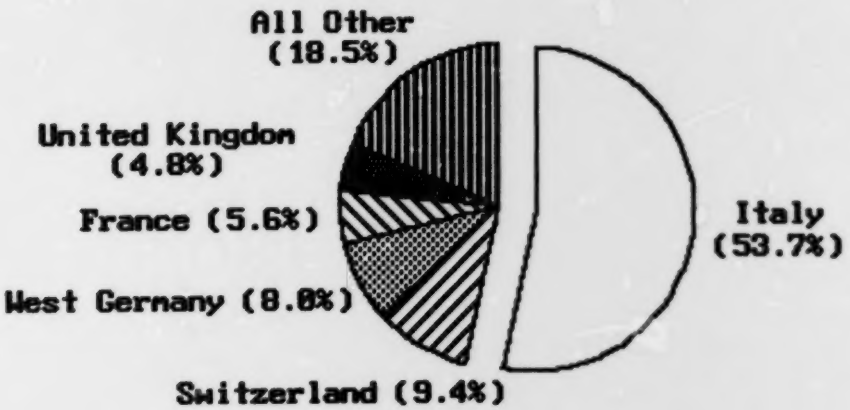
Figure 3-2 depicts the relative shares of world exports accounted for by the top five exporting countries in 1985. Italy, accounting for 54 percent of world precious jewelry exports in 1985, remained the preeminent supplier during 1981-85. Switzerland was the second largest supplier over the period, accounting for 9 percent of world exports in 1985. The United States slipped from the number six world exporter to eighth place as U.S. exports dropped

Figure 3-2
Precious jewelry: Major world suppliers, 1985



19 percent during the period, and which accounted for 3 percent of world exports in 1985. U.S. exports met increasingly stiffer competition in third-country markets from developing country suppliers. This competition was exacerbated, particularly with respect to Italy, by the strong U.S. dollar. Appendix H contains detailed information on selected major precious jewelry competing nations.

World exports of total jewelry, precious and costume, increased 8 percent, from $4.7 billion in 1981 to $5.1 billion in 1985. 1/ Exports of precious jewelry fluctuated on an increasing trend, rising 4.8 percent overallfor the period, whereas those of costume jewelry declined from 1981 to 1983 and then rose annually to show an overall increase of 32 percent for the period. The relative share of total jewelry exports accounted for by precious jewelry rose from 87 percent in 1981 to 88 percent during 1982-83, and then declined to 84 percent in 1985 (fig. 3-3).

1/ Reported world exports differ from world imports discussed in ch. 2 because of the variations in reporting and valuation systems of different countries.

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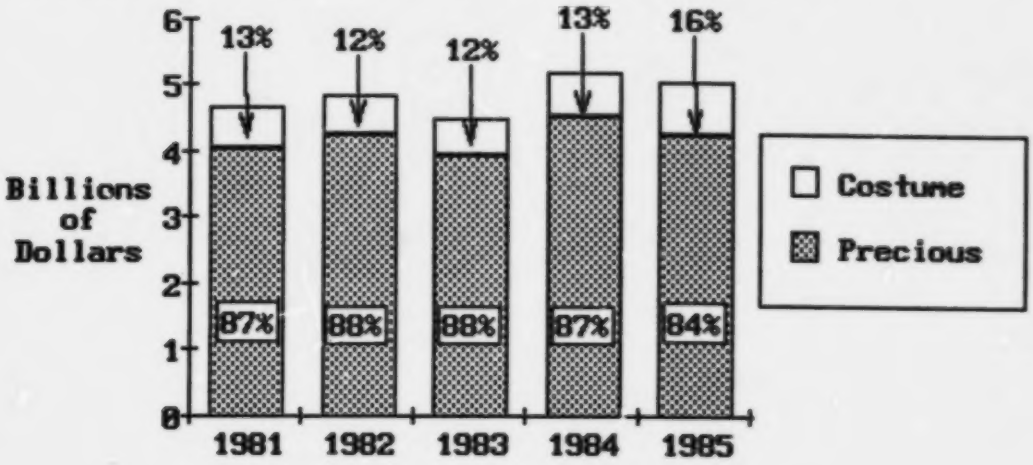
Figure 3-3
All jewelry: World exports, by type, 1981-85



Source: Estinated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

U.S. exports of all jewelry during 1981-85 decreased at an average rate of 6 percent per year and amounted to $165 million in 1985. U.S. exports of costume jewelry declined 29 percent over the period compared with precious jewelry that declined by 19-percent; however, in terms of value, exports of precious jewelry were more than that for costume jewelry. For further detail on the importance of precious jewelry to the total jewelry trade, see appendix G.

World exports of precious-metal jewelry, which accounted for at least 96 percent of annual precious jewelry exports, fluctuated during the period, but registered an overall 5-percent increase (table 3-2). As was the case for overall precious jewelry exports, the growth suppliers were those that supply the U.S. market. Exports from Italy were six times larger than those of the next largest supplier in 1985 and accounted for 56 percent of total world exports. Switzerland and West Germany were the second and third leading world suppliers, accounting for 9 percent and 8 percent of total world exports, respectively, in 1985. Combined, such exports from the second through the fourth leading world suppliers decreased an average of 13 percent during the period. Thailand entered the ranks of the top 10 world exporters as a result of Thai efforts to move vertically up the manufacturing ladder from a role as a supplier of raw materials, particularly gemstones, to a producer of finished jewelry. Most Thai exports are treated as precious-metal jewelry rather than gemstone jewelry in world trade statistics because most Thai precious jewelry contains smaller gemstones and the precious metal accounts for the chief value of most pieces.

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Table 3-2
Precious-metal jewelry: Top 10 world exporters' exports, 1981-85, share of world exports, and share of U.S. imports from each supplier, 1985

Country	1981	1982	1983	1984	1985	Share of world total, 1985	Change, 1985 from 1981	Share of U.S. imports, 1985
	1,000 dollars					Percent		
Italy.....	1,946,586	2,277,099	1,871,261	2,183,513	2,288,256	55.5	17.6	64.3
Switzerland.....	482,265	450,118	416,964	521,510	372,719	9.0	-22.7	5.6
West Germany..	353,912	342,337	328,997	311,767	326,529	7.9	-7.7	1.6
France.....	256,202	217,319	213,952	264,928	237,904	5.8	-7.1	1.1
United Kingdom..	297,620	231,232	365,810	444,973	196,210	4.8	-34.1	0.4
Hong Kong..	105,770	127,693	138,217	177,781	182,284	4.4	72.3	4.9
Israel.....	110,395	113,058	121,157	138,338	154,530	3.8	40.0	7.6
Spain.....	87,923	86,840	100,848	89,289	83,253	2.0	-5.3	1.4
Thailand...	24,163	25,276	44,700	53,042	79,861	1.9	230.5	1.8
United States...	67,872	44,770	48,053	49,696	56,515	1.4	-16.7	-
World total....	3,915,035	4,121,220	3,820,830	4,411,535	4,119,751	100.0	5.2	100.0

Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

Exports of precious-metal jewelry from the United States dropped from $68 million in 1981 to $45 million in 1982, and then recovered at an average of 8 percent per year to $57 million in 1985. Exports by the United States accounted for just under 2 percent of the world total in 1981 and slightly more than 1 percent in 1985.

World exports of gemstone jewelry fluctuated on a declining trend during 1981-85, decreasing 6 percent overall to reach $148 million in 1985 (table 3-3). Such exports from the United States, the world's leading supplier, decreased an average of 6 percent per year and amounted to $71 million in 1985. The share of world exports accounted for by the United States dropped from 57 percent in 1981 to 48 percent in 1985. U.S. exports are highly concentrated in gemstone jewelry incorporating stones other than pearls, and suffered from both stiffer competition from emerging suppliers as well as an exchange rate disadvantage in the developed markets during much of the period.

Table 3-3
Gemstone jewelry: Top 10 world exporters' exports, 1981-85, share of world exports, and share of U.S. imports from each supplier, 1985

Country	1981	1982	1983	1984	1985	Share of world total, 1985	Change, 1985 from 1981	Share of U.S. imports, 1985
	1,000 dollars					Percent		
United States.....	89,892	85,159	81,284	67,110	70,844	47.9	-21.2	-
Switzerland...	31,871	25,369	26,152	31,213	30,119	20.4	-5.5	3.0
West Germany..	12,196	15,880	13,860	13,092	14,726	10.0	20.7	3.2
United Kingdom.....	858	2,182	1,805	3,350	6,608	4.5	670.2	3.0
Hong Kong.....	5,984	6,256	3,357	3,536	6,114	4.1	2.2	37.0
Australia.....	2,314	1,107	2,502	3,164	3,447	2.3	49.0	.1
Singapore.....	837	1,048	1,704	2,360	3,016	2.0	260.3	1.2
Italy.....	1,895	2,126	2,591	2,744	2,786	1.9	47.0	14.7
Korea.....	23	24	235	323	2,615	1.8	11,269.6	.6
New Zealand...	2,145	1,174	1,502	2,237	1,659	1.1	-22.7	.1
World total...	157,098	149,927	157,467	140,039	147,815	100.0	-5.9	100.0

Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

Chapter 4. U.S. Market

4.1. Domestic market profile

The U.S. market for precious jewelry is the largest in the world. Americans absorbed more than 40 percent of the world's imports of precious jewelry and 96 percent of domestic production in 1986. The demand for precious jewelry is based partly on its consumption value as articles of personal adornment, and partly on its value as a store of wealth. The precious metal and gem content that constitutes most of the value of precious jewelry historically retained their value when money and other assets have not. As a result, there is often a high speculative demand for precious jewelry during periods of economic uncertainty, such as war or inflation.

During the late 1970's and early 1980's the speculative demand for precious jewelry in the United States increased because of the high rate of inflation at that time and the depreciation of the dollar against other currencies. Since then, the speculative demand for jewelry has decreased. Industry sources indicate that few U.S. consumers now purchase precious jewelry as an investment.

In addition to price, industry sources indicate that product quality and design are major factors influencing product selection. These sources indicate that American consumers generally believe that European products are superior in quality and design, and often request such products. However, many U.S. retailers indicate in questionnaire responses that they group products from different sources together and did not know, and often were not interested in, whether the product was made in the United States or abroad. They indicate that their purchasing decision was primarily based on price. This lack of concern over the country of origin partially explains a recent survey by a national jewelry trade publication which indicated that more than 87 percent of jewelers surveyed reported that karat-marked jewelry they purchase did not carry a trademark. 1/

Based on data from questionnaires of the Commission, the share of the U.S. market accounted for by precious-metal products increased from 68 percent in 1982 to 70 percent in 1986. Following the increased use of gold-filled metal during the early 1980's, when gold prices were high and unstable, there has reportedly been a gradual return to karat gold items in the U.S. market. According to the International Gold Corp. (IGC), an estimated 79 percent of gold jewelry purchased in the United States is 14 karat. Ten karat gold jewelry accounts for an estimated 13 percent and 18 karat, and above, gold jewelry accounts for 4 percent. The karatage of the remaining 4 percent is not known. In addition, certain products tend to be concentrated in certain alloys. For example, most class rings are reportedly made of 10K alloy, wedding rings are split between 10K and 14K, and high-fashion pieces are increasingly concentrated in 18K. Reportedly, only traditional sectors such as class rings and wedding bands are immune from import competition because their demand is not as dependent on fashion changes.

1/ For further information see ch. 9 of this report. The cited survey is discussed in 87.7% of Survey Respondents Violating Trademarking Laws, National Jeweler, Aug. 16, 1986, p. 50.

Women play a significant role in the U.S. precious jewelry market and, based on IGC information, purchase an estimated 87 percent of all precious jewelry. According to the IGC, women account for 89 percent of total self-purchases of gold jewelry in the United States. The popularity of jewelry articles as gift items has reportedly declined somewhat as consumers are buying more for personal wardrobes. The return of women to the workforce was a major contributing factor in the expansion of the market during 1982-86. The desire to complement a woman's work wardrobe, by adding a feminine look to business attire, has contributed to new designs in precious jewelry.

Slightly more than one-half of all gold jewelry purchased in the United States goes as gift items, the great bulk of which are for women. The popularity of jewelry as a gift item contributes to the highly cyclical or seasonal nature of the market. Thus, approximately one-half of annual jewelry sales occur during the fourth quarter of the year. The seasonality of the precious jewelry market is more significant than that of the costume jewelry market because precious products are more expensive and are often planned rather than impulse purchases.

In addition to the seasonality of the jewelry market, fads play a significant role in the market. When the popularity of a market element, such as a particular article, material, or design, skyrockets for a relatively short period of time, that element is considered to be faddish. Fads appear to be frequent in the domestic market since designs turn over very quickly. With each new fad, demand for specific articles shift, but the overall market is not significantly affected. Some fads can turn into trends. If a fad remains popular for a relatively long period, usually more than about five years, it is considered a trend in the marketplace and can last for many additional years.

Gold necklaces and neck chains provide an example of a fad in precious jewelry that has become a trend. These goods attained faddish popularity in the late 1970's. Since then, however, the popularity of these goods has remained steady. According to Commission questionnaire responses, imports of neckwear, primarily gold chain, increased from 59 percent of total precious jewelry imports in 1982 to 61 percent in 1985. In 1986, they declined to 54 percent and, according to industry sources, their popularity dropped in favor of gemstone jewelry.

Although the precious jewelry segment of the industry in not as volatile in terms of style as costume jewelry, the American consumer expects precious jewelry to be as versatile and as ornamental as costume jewelry. Precious jewelry manufacturers are able to provide new and different looks by using various finishing methods, altering the color of the metal, and choosing from a myriad of gemstones. Although many factors affect the popularity of particular styles in the domestic market, most popular designs are reportedly based on current styles in Europe, generally with a lag of 6 months to 1 year.

Traditionally, costume jewelry emulated the look of precious jewelry, however, industry sources indicate that precious jewelry now follows the trends in costume jewelry. For instance, bold and striking colored jewelry is in vogue in the costume jewelry market. Precious jewelry manufacturers were able to achieve this look with deep-colored stones and different metal combinations. By following fashion trends, precious jewelry manufacturers

determine what type of jewelry will be in demand. The use of certain colors or fabrics tends to dictate the color of metal needed to accessorize popular outfits. Since silver jewelry costs less than gold jewelry of the same design, Vermeil, or the use of gold and silver together, are gaining popularity in the market.

In recent years, cable TV merchandising has become a viable channel of distribution for precious jewelry. Since late 1986, 12 national home shopping services have begun operation. Jewelry accounts for an estimated 35 percent of the total merchandise sold through these operations. Industry sources indicate that jewelry is used as an "anchor" to attract and hold the main audience. The target market for these shows is working women with a higher than average disposable income and little time for shopping. These cable networks are able to offer bargain prices because they obtain their inventory from buyouts and liquidations. However, some industry participants allege that these shows practice deceptive pricing, specifically marking up items in order to discount, and also question whether the jewelry has proper quality marks and trademarks. Italian jewelry, primarily gold chain and earrings under $100, are the most common items sold. The overall rate of merchandise returned for these operations is 1 out of 10 items and, for one agency, returns represent 17 percent of sales. This rate is considerably higher than the rate of return for discount stores, the most comparable channel of distribution.

Licensing has become a popular facet of jewelry marketing. In the precious jewelry market, commercial names used in jewelry products are generally designers', however, various well-known groups including sports franchises have recently awarded licenses to jewelry manufacturers. Licensing is said to have a major impact on consumers, who identify the licensee's image with the product. In the highly competitive jewelry market, any marketing advantage can significantly affect business. Some producers use licensing as a technique to broaden their lines within a price range, as well as to add new markets. Others value the exclusivity in product distribution that licensing allows. Some of the drawbacks to licensing include requirements that the manufacturer get prior approval for most designs, or changes in design, and promotional materials. In addition, manufacturers reportedly pay substantial fees and royalties, based on sales, to the licensee.

The composition of apparent U.S. consumption of precious jewelry articles during 1982-86 showed declines in consumption of rings and findings and increases in that of neckwear and other jewelry articles, reflecting the increased popularity of chain in neckwear and bracelets. Apparent consumption of such articles is shown in the following tabulation, 1982 and 1986 (in percent of total consumption):

	1982	1986
Rings	46	41
Neckwear	21	26
Earrings	9	9
Findings	9	6
Other jewelry articles	15	18
Total	100	100

4.2. Trends in consumption and import penetration

In nominal terms, estimated apparent U.S. consumption of all jewelry, precious and costume, rose 37 percent, from $4.8 billion in 1982 to $6.7 billion in 1985. The bulk of this growth was accounted for by an 11.6 percent per year increase in precious jewelry consumption compared with an 11.5 percent per year increase in costume jewelry consumption. Further, the share of metal products in precious jewelry, 70 percent, is significantly less than it is in costume jewelry, 85 percent. In 1985, the latest comparable period, overall import penetration in precious jewelry was 9 percent greater than in costume jewelry (34 percent compared with 25 percent). The greatest level of import penetration was registered in nonmetal costume jewelry, at 84 percent, with the second greatest degree registered in precious-metal jewelry, at 42 percent. The lowest penetration, 14 percent, was registered in gemstone jewelry.

Precious jewelry.--Estimated U.S. consumption of precious jewelry, adjusted for price changes, increased 55.5 percent, averaging 11.7 percent annually, to $5.3 billion during 1982-86. This growth was primarily because of increasing imports, which experienced a real average annual increase of 21.7 percent, compared with a 3.3-percent average annual real increase for U.S. producers' shipments (table 4-1; fig. 4-1).

As imports more than doubled, the ratio of imports to apparent consumption increased from 23.3 percent in 1982 to 37.4 percent in 1986. However, the largest increase in imports occurred during 1984-85 when imports increased by 44 percent, to $1.7 billion, and the import penetration ratio rose from 26.3 percent to 33.9 percent.

The 55.5-percent real growth in consumption was a reflection of stable gold prices, relative to 1978-81, and increased consumer demand as a result of rising real per capita personal disposable income, which increased 11 percent, from $9,725 in 1982 to $10,780 in 1986. In addition, increased marketing efforts by foreign suppliers contributed to consumer awareness and demand for precious jewelry, primarily gemstone products.

Precious-metal jewelry.--U.S. apparent consumption of precious-metal jewelry, comprising the bulk of the domestic market for precious jewelry, grew at an average annual rate, adjusted for price changes, of 13.5 percent during 1982-86 (table 4-2). Imports during the period increased at an annual rate of 28.4 percent in sharp contrast to the slower 4.0 percent real annual growth in U.S. producers' shipments.

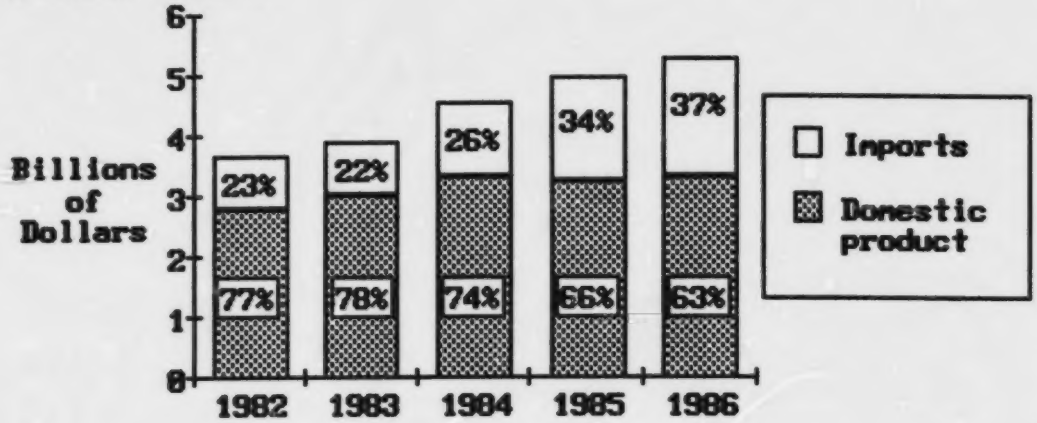
Table 4-1
Precious jewelry: U.S. producers' shipments, exports of domestic merchandise, imports for consumption, and apparent consumption, 1982-86

Year	Producers' shipments 1/	Exports	Imports	Trade balance	Apparent consumption	Ratio of imports to consumption
	(Million dollars)					(Percent)
1982	2,927	114	857	-742	3,669	23.3
1983	3,160	117	878	-761	3,921	22.4
1984	3,455	95	1,196	-1,101	4,556	26.3
1985	3,482	114	1,728	-1,614	5,097	33.9
1986	3,476	148	1,986	-1,837	5,313	37.4
Percentage change:						
Nominal:						
1986 from 1982	18.8	29.8	131.7	147.6	44.8	-
Average annual: 1986 from 1982	4.4	6.7	23.4	25.4	9.7	-
Real: 2/						
1986 from 1982	13.9	24.6	193.3	219.7	55.5	-
Average annual: 1986 from 1982	3.3	5.7	21.7	33.7	11.7	-

1/ Projected from shipments data in response to questionnaires of the U.S. International Trade Commission.
2/ Deflated by price data on precious-metal jewelry prcvided by BLS and questionnaire data.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Figure 4-1
Precious jewelry: Apparent U.S. consumption, by source, 1982-86



Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission and official statistics of the U.S. Department of Commerce.

The share of the $3.8 billion U.S. market taken by imports rose by almost 50 percent during the 1982-86 period, from about 31 percent to 45 percent. Even though prices of domestically produced precious-metal jewelry either stabilized or declined, those of imported jewelry competed more successfully on the basis of nongold production costs--notably labor--in which the foreign product had a clear advantage.

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Table 4-2
Precious-metal jewelry: U.S. producers' shipments, exports of domestic merchandise, imports for consumption, and apparent consumption, 1982-86

Year	Producers' shipments 1/	Exports	Imports	Trade balance	Apparent consumption	Ratio of imports to consumption
	Million dollars					Percent
1982.....	1,772	45	778	-733	2,505	31.1
1983.....	1,922	48	779	-730	2,653	29.4
1984.....	2,219	50	1,038	-988	3,207	32.4
1985.....	2,112	57	1,514	-1,457	3,569	42.4
1986.....	2,160	87	1,712	-1,625	3,785	45.2
Percentage change:						
Nominal:						
1986 from 1982.....	21.9	93.3	120.1	121.7	51.1	-
Average annual: 1986 from 1982.....	5.1	17.9	21.8	22.0	10.9	-
Real: 2/						
1986 from 1982.....	16.9	84.4	171.6	184.3	65.9	-
Average annual: 1986 from 1982.....	4.0	16.5	28.4	29.9	13.5	-

1/ Projected from shipments data in response to questionnaires of the U.S. International Trade Commission.
2/ Deflated by price data on precious-metal jewelry provided by BLS and questionnaire data.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Gemstone jewelry.--Apparent U.S. consumption of gemstone jewelry increased 31 percent during 1982-85 and remained stable during 1985-86 (table 4-3). During the period U.S. imports more than tripled, increasing by

Table 4-3
Gemstone jewelry: U.S. producers' shipments, exports of domestic merchandise, imports for consumption, and apparent consumption, 1982-86

Year	Producers' shipments 1/	Exports	Imports	Trade balance	Apparent consumption	Ratio of imports to consumption
	Million dollars					Percent
1982	1,155	70	79	-9	1,164	6.8
1983	1,238	69	99	-30	1,268	7.8
1984	1,236	46	159	-113	1,349	11.8
1985	1,371	57	214	-157	1,528	14.0
1986	1,315	62	274	-213	1,527	17.9
Percentage change: 1986 from 1982	13.9	-11.4	246.8	2,266.6	31.2	-
Average annual: 1986 from 1982	3.3	-2.9	36.5	120.6	7.0	-

1/ Projected from shipments data in response to questionnaires of the U.S. International Trade Commission.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

$195 million. U.S. producers' shipments of gemstone jewelry rose 7 percent during 1982-83 and then stabilized in 1984. Increased demand for colored gemstone jewelry, chiefly that containing small stones, was met primarily by lower priced imports. However, in 1985, prices stabilized and U.S. shipments recovered as producers adjusted to increased market demand for pieces with larger stones. The decline in U.S. shipments of gemstone jewelry in 1986 was in large part the result of a change in market demand toward lower priced jewelry with a number of small colored gemstones. This type of jewelry is more labor intensive than that produced domestically which uses relatively larger stones. The ratio of imports to apparent consumption for gemstone jewelry rose annually from 7 percent in 1982 to 18 percent in 1986; the largest jump was from 8 percent to 12 percent during 1983-84.

Chapter 5. U.S. Industry Profile

5.1. Production process

Precious jewelry is created from minerals and metals that are prized for their chemical and physical properties. In precious metals these properties include resistance to corrosion, hardness, strength, and color, and those in gemstones include color, clarity, hardness, rarity, and availability. These properties are also useful in the production of a variety of industrial and consumer products in addition to jewelry.

The most popular materials used in producing precious jewelry are gold and diamonds. Gold is the principal precious metal because it is the most malleable of all precious metals and retains an intrinsic value regardless of the form it takes; it also has a bright, pleasing color. Of all gemstones, diamonds are the most popular because they also have an intrinsic value and can be combined with many different materials and retain their natural beauty.

Precious jewelry production involves three phases; first, preparation of the raw materials; second, forming of the piece; and third, finishing operations. The specific technology used in production depends on the article being made and the materials that are being used. In general, the relative labor intensity is inversely related to the amount of metal included in the final piece. For example, in the lower priced chain segment of the industry, most product is machine made with some hand finishing performed as a final operation. In the high-priced gemstone-set segment of the industry, the cutting and setting of gemstones involve a high degree of skilled labor. Overall, the manufacturing of precious jewelry is a relatively labor-intensive process, particularly in assembling component parts, stone setting, and final finishing operations.

Preparation of raw materials.--In the case of metals, alloys are blended or filled metals are formed that yield the desired karatage, strength and color; in minerals, gemstones are cut in the desired shape and polished before they are set.

Precious metals.--Since gold in its pure state (24K) is too soft to wear everyday, it is most often used as an alloy with other metals that add strength and durability to the compound. The quality of an alloy is indicated by its karatage or precious-metal fineness. An alloy's karatage or fineness is the ratio of the total weight of gold to the total weight of the entire compound. In the U.S. market, the quality of an alloy is indicated by the karat weight and is measured as a ratio of 24ths. In most European markets, quality is indicated by a fineness mark equal to the decimal equivalent of the same ratio expressed in decimal form or in parts per thousand. The most common gold alloys used in jewelry are as follows:

American marking 1/ (Karatage)	Fine Gold content (Percentage of gold)	European marking (Fineness)
9K	0.375	375
10K	.417	417
12K	.500	500
14K	.583	583
18K	.750	750
22K	.917	917
24K	.999	999 2/

1/ For simplification, throughout this report we will use the abbreviation "K" to denominate karatage.
2/ It is virtually impossible to obtain pure gold not mixed with other metals. The most common commercial grades of gold are 0.9995 to 0.99995.

The popularity of a particular karatage in a market is primarily dependent on local social and cultural traditions. Most national laws, based on social traditions, require a legal minimum karatage and establish allowable tolerances around them. These laws are not internationally uniform and each market can, and often does, have different standards. In the United States over three-fourths of gold jewelry purchases are made of 14K gold; in most major European markets over one-half of the purchases are in 18K, and 14K items account for an additional 25 percent. Appendix I contains a list of the distribution of gold jewelry purchases, by karatage, in selected world markets.

In the United States, the so-called plumb gold standard, which became compulsory in 1981, specifies a minimum legal tolerance for all karat gold alloys of 0.003 (3 parts per thousand), and 0.007 (7 parts per thousand) for all gold soldered articles. However, this is not a universal standard for all countries. Some countries do not allow any deviation from the proper fineness of an alloy and others allow for a greater tolerance. Further information concerning national requirements for fineness and tolerances can be found in chapter 9.

The color of a gold alloy can be altered by changing the metals with which gold is combined. This technique is often used in jewelry applications because of changing fashions and the importance of color to designs. Karat gold generally falls into four basic colors, though the number of shades is virtually limitless. These four colors are yellow, white, red/pink, and green. The metals mixed with gold to achieve these colors are as follows:

Color	Relative amounts of alloy metals
Yellow	Balanced amounts of silver, copper, and zinc
White	Balanced amounts of copper, nickel, and zinc (however silver and palladium can be used at a higher cost)
Red/pink	High copper, low silver and low zinc
Green	High silver, low copper and low zinc

The most popular color of gold jewelry in most markets is yellow. Appendix J contains a list of the distribution of gold jewelry purchases in selected world markets, by color of gold.

In addition to karat gold, precious jewelry can be made of what is commonly known as filled metal. The term "filled" refers to a metal compound where the interior is a base metal (such as iron or steel) to which a precious metal coating has been bonded, on all significant surfaces, by mechanical means such as soldering, brazing, or welding. In the United States, the plating must be of a gold alloy of not less than 10 karat fineness and of substantial thickness 1/. The term "gold or silver filled" can only be used when the plating constitutes at least 1/20th of the total weight of the metal in the entire article. If the weight of the plating metal is less than 1/20th of the total weight of all metal, the term rolled-gold plate or gold plate 2/ is used.

Gemstones.--The most important qualities of gemstones are appearance, durability, and rarity. The appearance of a gemstone is dependent upon the internal characteristics of a stone. Color, transparency, and brilliance 3/ are also important to the appearance. Durability can be determined by its resistance to abrasion, chipping or splitting, and is often measured by its relative hardness. The rarity of a stone is critical in determining its value and is often more important than physical characteristics.

The basic preparation of gemstones for use in jewelry involves cutting desired shapes from the rough mineral followed by a polishing operation to obtain the best appearance of the material. With most stones, cutting and polishing are two separate operations; however, diamonds are generally cut and polished at the same time. Cutting involves the sawing and grinding of a rough material into a finished gem form. Sawing is used to cut large, rough blocks of raw minerals into slices of a desired thickness. These slices are then ground to form the desired shape to fit a jewelry mounting. Stones are generally ground a number of times and each successive grinding removes any leftover scratches by using progressively finer materials.

The appearance of some gemstones are further improved through the cutting of facets. A facet is a smooth face or surface of a cut gemstone. This technique is generally used on hard transparent gemstones and increases the brilliance of the stone. The most common type of cut is called the "brilliant" cut and has 58 facets; 33 above the edge, or "girdle," and 25 below, arranged in symmetry. In the final polishing, hard felt or leather straps are usually used with various polishing agents such as fine diamond or rouge compounds to brings out the inner brilliance of the stone.

1/ According to the Federal Trade Commission Guides for the Jewelry Industry, (16 CFR Part 23), "the term 'substantial thickness' is to be construed as requiring that all areas of the plating be of such thickness as to assure of a durable coverage of the base metal to which it has been affixed."

2/ The term gold plate should not be confused with gold electroplate. The former refers to a precious metal coating affixed by mechanical means, and the latter refers to one affixed by electrolysis.

3/ Brilliance refers to the brightness of a gemstone and is obtained from polish and internal light reflection.

Many gemstones are also subjected to various treatments that enhance their natural beauty. These treatments 1/ include bleaching, coating, 2/ dyeing, 3/ filling, 4/ heating, 5/ impregnation, 6/ lasering, 7/ oiling, 8/ stabilization, 9/ irradiation, 10/ and surface diffusion. 11/

Once the necessary cutting, polishing, and enhancing is completed, gemstones are graded on their color, cut, and clarity. Various scales have been developed to rank the various types of stones and their characteristics; by combining these rankings and the known carat weight, the value of a cut gemstone is determined.

Forming the piece.--In the forming phase, grain or stock forms of the materials are worked to yield a semifinished product that is assembled into pieces ready to be finished. Two methods of processing metal for precious jewelry are (1) the cutting of forms from flat stock and (2) creating complex designs of solid metal using casting techniques. The form-cutting method involves stamping, the mechanical formation of parts by striking flat stock into dies in power-driven or foot-operated presses to create desired forms or photo-chemical etching, a technique in which a design is etched on flat stock that has a sensitized surface. The flat stock is then subjected to an acid bath that eats away the metal around the design. This process enables small parts to be produced without distortion or burred edges. Most component parts, or findings, used in the manufacture of fine jewelry are made from flat stock, wire, or tubing.

The casting method consists of pouring molten metal into molds of bronze, rubber, or plaster to duplicate models made from a wax pattern. Pressure may be applied to the molds by centrifugal force, air, steam, or a vacuum beneath the mold. Generally, the lost-wax-casting method is used in most jewelry production. This involves the making of a "tree" of numerous identical wax models affixed to a wax base and pouring plaster of Paris over the "tree" to

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1/ The following information was obtained from The Jewelry Industry Gemstone Enhancement and Man-Made Product Information Guide, January 1987.

2/ Coating involves the use of lacquer, enamel, ink, foil, or sputtering of films to improve, provide color, or add other special effects.

3/ Dyeing involves adding coloring matter into a gemstone to give it a new color, intensify present color, or improve color uniformity.

4/ Filling involves the masking of surface cavities, usually with molten glass or plastic, to improve appearance.

5/ Heating involves the intentional use of heat to effect desired alteration of color and/or clarity.

6/ Impregnation involves the general infusion of a substance such as colorless parafin or wax into a porous material.

7/ Lasering involves the use of a laser and chemicals to reach and alter inclusions in diamonds.

8/ Oiling involves the penetration of colorless oil into voids or faults to improve overall appearance.

9/ Stabilization involves the use of a colorless bonding agent within a gemstone to improve durability and appearance.

10/ Irradiation involves the use of high energy of sub-atomic particle bombardment to alter and improve a gemstone's color.

11/ Surface diffusion involves the use of high temperature and chemicals resulting in the shallow penetration of near surface coloration and/or asterism in a gemstone.

form the mold. When the plaster dries, the mold is fired and the wax melts away, leaving a hollow cavity into which the molten metal is poured. When the casting cools, the mold is broken and the jewelry is cut off, ready for finishing. Die casting, another popular form of casting, is a process in which molten metal is forced into a metal mold or die under pressure. Casting has two advantages over stamping in that it is often less costly, permitting economies of scale for mass production of uniform pieces, and permits greater freedom of design. Both gold and silver alloys are used in casting precious-metal jewelry.

Following the manufacture of component parts, pieces are assembled mechanically or by hand with the use of rivets, screws, and springs, or by soldering or welding. Soldering can be done by hand, in the case of attaching a setting to a ring blank, or by machine, as in the case of joining chain links together. The solder material is usually made of the same alloy as the article. However, it must have a lower melting point in order to prevent the melting of the original piece when bonding occurs.

Finishing.--Machine- and hand-finishing techniques are both used. The preferred form of finishing depends on the quality of the materials in the piece, generally in an inverse relationship, and the desired final effect. For certain stone or pearl necklaces, finishing operations consist of stringing and packaging. In metal jewelry, however, various operations which create a desired appearance are more complex. In general, metal jewelry is polished and given a flashing, or thin electroplating, to enhance the color. Precious-metal jewelry can also be etched with a design, brushed to give a textured look, or diamond-cut to produce a shine. Once the metal achieves the desired look, there may be some stone setting and further polishing before packaging.

Polishing involves the gradual smoothing and buffing of the metal to achieve a desired texture and shine. Materials used as polishing agents include emery paper, cloth, wood, leather, cotton, and wool. These operations can be done with various polishing wheels operated by hand or by machine. In general, hand polishing produces the highest quality finish because it can reach the smallest parts of an intricate design. Usually, a tumbling method is used to polish large quantities of relatively small jewelry articles. 1/ The final step involves the application of a flashing, or thin electroplating, which covers the metal with a film of a higher quality (karat) metal by an electrolytic process. The article to be covered is immersed in a chemical solution; electric current flows through the solution from a piece of coating metal (anode) to the article (cathode), depositing the metal on it.

Jewelry chain is most commonly made of gold alloys and most is manufactured by machine. The use of chain machines from Italy or West Germany is predominant in many parts of the world, although some U.S. chain manufacturers have built their own machines, usually based on Italian or West German designs. Different sizes and types of machines, as well as separate

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1/ Tumbling is used to polish jewelry of certain forms by rotating them in a power-driven barrel with special polishing agents; the pieces are polished by friction as they "tumble" on each other.

tooling, may be required, depending on the type of chain manufactured. The two most common chain styles are curb and cable. 1/ Literally hundreds of other styles are formed by various hammering and shaping of these basic links.

The production process for chain begins with wire. 2/ The wire is fed from a spool or coil into a machine, where links are formed and connected. The chain is strung off the machine in hanks and wiped clean. The next step prepares the chain for soldering by coating it with talcum powder. Most producers throughout the world solder chain in an electric dissociate ammonia furnace. Flashing or gold-washing of finished chain provides a uniform color and sparkling appearance and is a standard practice among many chain manufacturers.

5.2. Structure of the domestic industry

U.S. producers.--There were over 2,000 U.S. producers of precious jewelry during 1982-86. Exact figures on the number of establishments are not available; however, according to information supplied by the Jewelers Board of Trade, the number of all jewelry manufacturers (costume and precious) increased 30 percent from January 1983 to January 1986.

Approximately one-half of all precious jewelry manufacturers are located in the Northeast, primarily New York and Rhode Island. New York alone accounts for the largest concentration of such firms, and is home to approximately 35 percent of U.S. precious jewelry manufacturers. California and Rhode Island have the second and third largest concentrations of firms being home to approximately 12 percent and 11 percent of total firms, respectively. The concentration of precious jewelry manufacturers and suppliers in the New England region permits some economies of scale through the use of a large pool of trained jewelry workers, suppliers of parts, and subcontractors. Additionally, many major buying offices located in New York, a major fashion market and wholesale jewelry district, have relatively easy access to manufacturers. In addition to these major centers of production, precious jewelry producers can be found in approximately 15 other States nationwide.

U.S. producers of precious jewelry are somewhat specialized and not vertically integrated. Although some larger manufacturers participate in all areas of production and marketing, from preparing alloys to packaging, most purchase raw materials, parts, and services from jobbers such as casters, stampers, chain manufacturers, findings and other parts manufacturers, and electroplaters. According to the Census of Manufactures, the 4 largest firms in 1982 accounted for 16 percent of total industry shipments; the 8 largest for 22 percent; the 20 largest for 33 percent; and the 50 largest firms

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1/ Cable chain consists of three-dimensional interconnected links. Curb chain is cable that has been flattened to "two" dimensions.

2/ Wire used in chain making can be solid, or solder filled. By using solder-filled wire a manufacturer can reduce the weight of the final chain because as it is heated, the solder melts, leaving a hollow link. For purposes of this discussion, solid wire is assumed.

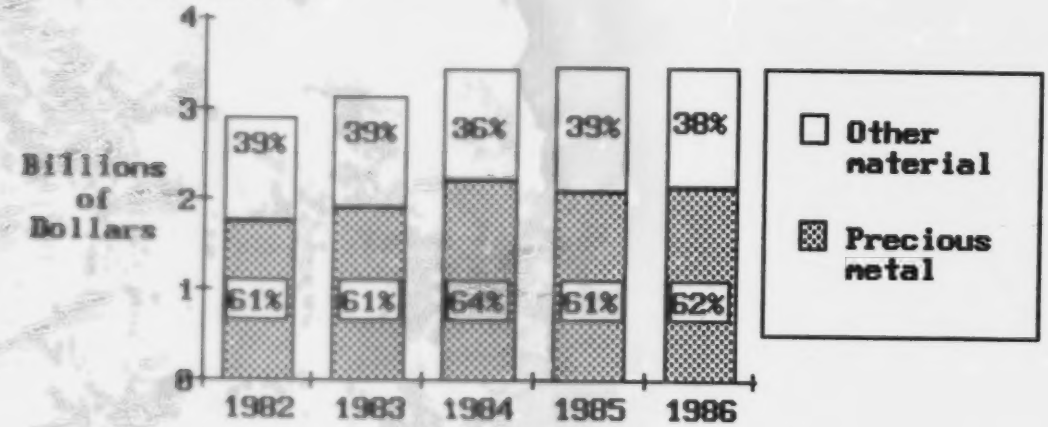
accounted for 47 percent of total industry shipments. These shares were all less than the corresponding values for costume jewelry producers in 1982 and for precious jewelry producers reported in the 1977 Census. In addition, this trend is the reverse of that for all manufacturing, which tended toward greater concentration during the period.

Capacity utilization.--According to statistics published by the U.S. Department of Commerce, the capacity utilization rate of U.S. precious jewelry manufacturers declined from 87 percent in 1983 to 51 percent in 1985. This is opposite the trend of capacity utilization rates for all miscellaneous manufacturing industries, which increased slightly from 61 percent in 1983 to 63 percent in 1985. The decline in capacity utilization can be attributed, in part, to an increase in the number of firms.

Questionnaire responses indicated that the greatest portion of domestic capacity is devoted to production of rings, earrings, neckwear, and findings. Religious articles and clasps were the least often produced and received the smallest portion of productive resources. Increased operating and production costs and increased competition from imports in the U.S. market were cited as factors limiting the expansion of production and market share.

U.S. producers' shipments.--The estimated value of U.S. producers' shipments of precious jewelry rose from $2.9 billion in 1982 to $3.5 billion in 1985 and 1986, or by 19 percent over the period (13.9 percent in real terms) (table 4-1). The share of total shipments accounted for by precious-metal jewelry rose from 61 percent in 1982 to 64 percent in 1984, and then returned to 61 percent in 1985 before rising to 62 percent in 1986 (fig. 5-1).

Figure 5-1
Precious jewelry: U.S. producers' shipments, by material, 1982-86



Source: Projected from Commission questionnaire responses for producers' shipments data.

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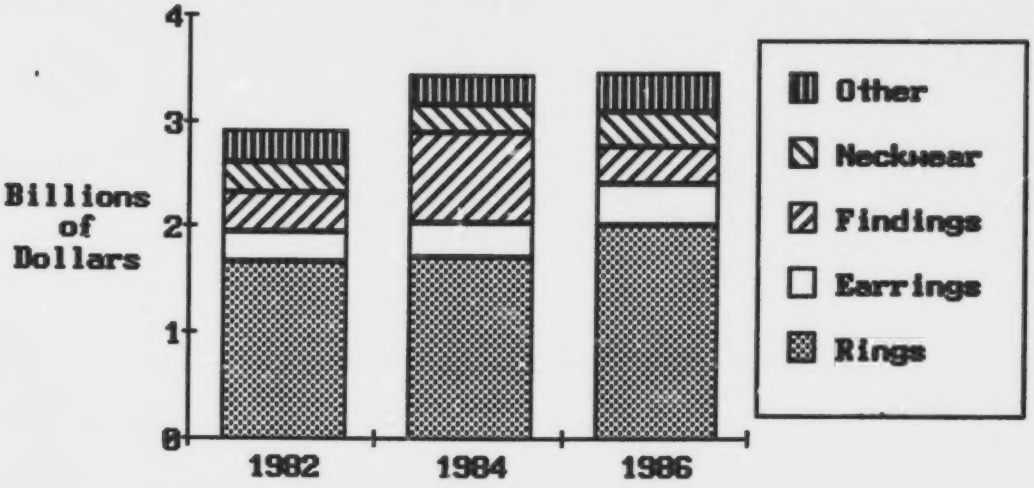
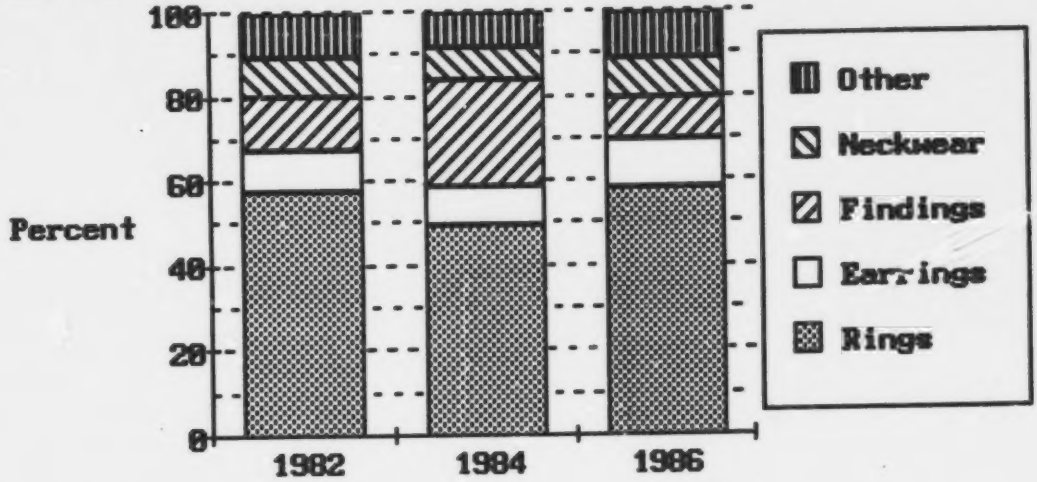
Figure 5-2 shows U.S. producers' shipments, by product, in billions of dollars during 1982, 1984, and 1986, and figure 5-3 shows the same data, in percent.

Figure 5-2
Precious jewelry: U.S. producers' shipments, by product, 1982, 1984, and 1986



Source: Projected from Commission questionnaire responses for producers' shipments data.

Figure 5-3
Precious jewelry: Share of U.S. producers' shipments, by product, 1982, 1984, and 1986



Source: Projected from Commission questionnaire responses for producers' shipments data.

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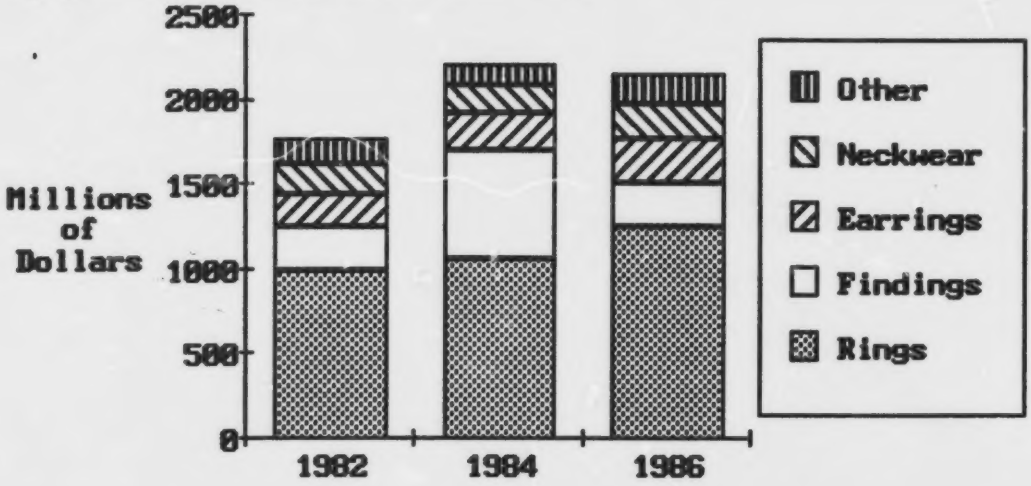
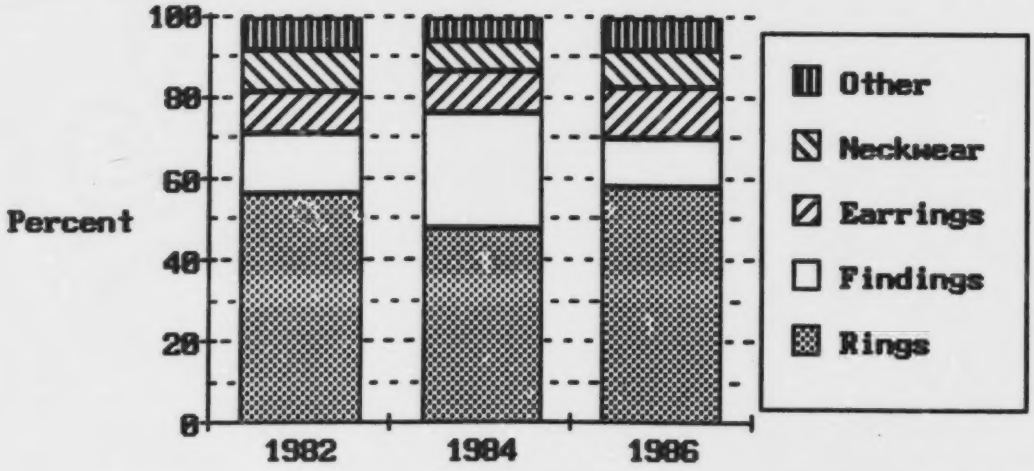
Estimated producers' shipments of precious-metal jewelry, which led the trend for all precious jewelry shipments, are illustrated, in value terms, in figure 5-4, and in percentage terms, in figure 5-5.

Figure 5-4
Precious-metal jewelry: U.S. producers' shipments, by product, 1982, 1984, and 1986



Source: Projected from Commission questionnaire responses for producers' shipments data.

Figure 5-5
Precious-metal jewelry: Share of U.S. producers' shipments, by product, 1982, 1984, and 1986



Source: Projected from Commission questionnaire responses for producers' shipments data.

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Estimated producers' shipments of gemstone jewelry rose irregularly, as the totals fell in 1984 and 1986 compared with those in each of the previous years. Such shipments registered an overall increase of 14 percent during the period, 3 percent per year, and amounted to $1.3 billion in 1986 (table 4-3 and fig. 5-6). The estimated shares of producers' shipments of gemstone jewelry changed somewhat on a product basis, during 1982-86. Rings accounted for the largest share of gemstone jewelry, at 64 percent in 1982; then decreased to 60 percent in 1986 (fig. 5-7). Other jewelry articles, primarily brooches, were the second largest gemstone product in 1986, increasing from 23 percent in 1982 to 25 percent in 1986. The share accounted for by neckwear rose from 4 percent in 1982 to 7 percent in 1986 and that for earrings remained at 6 percent; findings and clasps declined slightly from 3 percent to 2 percent.

On the basis of Commission questionnaire data, the following tabulation shows trends in estimated U.S. producers' shipments for all precious jewelry and that for precious metal and gemstone jewelry (in millions of constant 1982 dollars):

	Precious jewelry Million dollars	Index 1/	Precious-metal jewelry Million dollars	Index 1/	Gemstone jewelry Million dollars	Index 1/
1982....	2,927	100.0	1,772	100.0	1,155	100.0
1983....	2,984	102.0	1,754	99.0	1,238	107.2
1984....	3,364	115.0	2,144	121.0	1,219	105.6
1985....	3,431	117.3	2,095	118.3	1,337	115.8
1986....	3,346	114.4	2,071	116.9	1,273	110.3

1/ 1982=100.0.

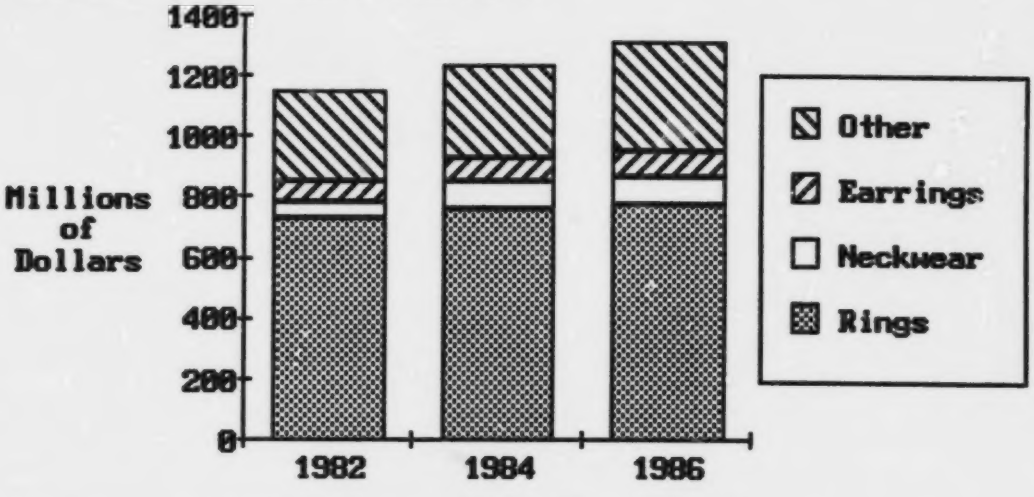
Producer costs.--The share of U.S. producers' shipments accounted for by raw materials cost and value added by manufacture 1/, and the share of value added accounted for by production workers' wages, for the years 1982-85, is illustrated in the following tabulation compiled from official statistics of the U.S. Department of Commerce (in percent):

Year	Ratio of materials costs to shipments	Ratio of value added to shipments	Ratio of production workers' wages to value added
1982...	58.5	42.1	23.7
1983...	60.7	39.9	24.3
1984...	59.6	40.5	25.3
1985...	59.0	42.1	24.3

Reflecting the relatively high cost of gold and precious stones, raw materials account for the bulk of the total cost of production. The cost of raw materials as a share of shipments in the precious-jewelry industry as a

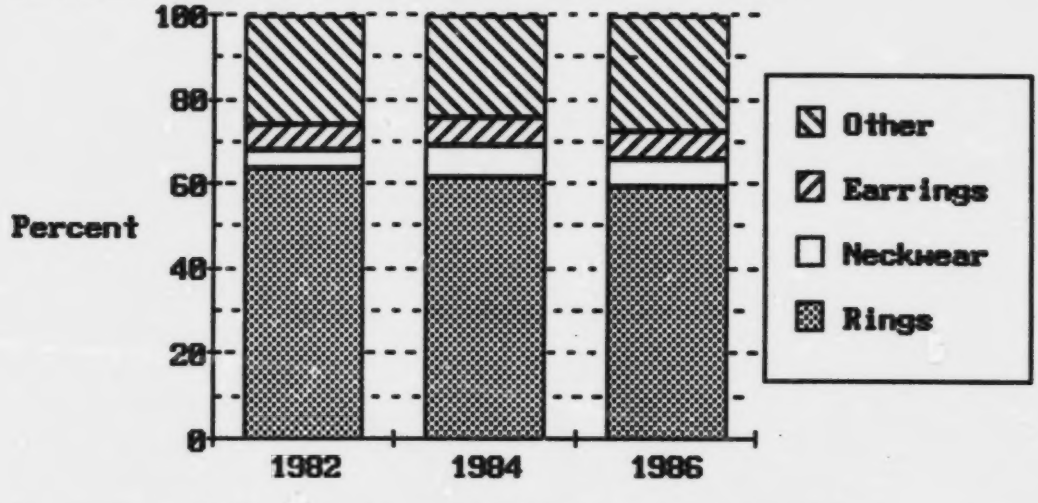
1/ Value added by manufacture is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments.

Figure 5-6
Genstone jewelry: U.S. producers' shipments, by product, 1982, 1984, and 1986



Source: Projected fron Commission questionnaire responses for producers' shipments data.

Figure 5-7
Genstone jewelry: Share of U.S. producers' shipments, by product, 1982, 1984, and 1986



Source: Projected fron Commission questionnaire responses for producers' shipments data.

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whole (SIC 3911) fluctuated on a slightly upward trend, from 59 percent in 1982 to 61 percent in 1983 as gold prices rose, then decreased to 59 percent in 1985, following a decline in gold prices. Conversely, the ratio of value added to shipments fluctuated in an inverse relationship, but was unchanged over the period at 42 percent. Increased production of intricately designed gemstone jewelry may have contributed to the slight increase in share of production workers' wages to value added in 1984. However, over the period, that share remained essentially unchanged at 24 percent.

Marketing aspects.--According to industry sources, the most distinctive factor, except size, differentiating the U.S. market from most others is the relative ease of access provided to foreign suppliers. In order to be successful, a supplier must be responsive to changes in style and taste, deliver on time, offer a good quality product, and, most important, be reasonably priced. As lower priced imports have increased in the domestic market, purchasers indicate that price has become the basis for most precious jewelry buying decisions. This contrasts with most major European markets and with Japan where quality of materials and craftsmanship, followed by design, are most important.

The bulk of U.S. precious jewelry producers are small firms that traditionally have relied on the wholesaler to market their products. Marketing efforts by producers were primarily concentrated in advertising in trade publications and local newspapers. Increasingly, however, medium-to-large retailers, with limited budgets, have begun buying directly from both domestic and foreign producers and some have sought joint production arrangements with foreign suppliers. In order to consolidate and increase their buying power, some retailers have joined together to purchase larger blocks of products where price is of primary importance.

U.S. producers use domestic trade shows to develop contacts with buyers, maintain old business relationships, and to observe new product styles and designs, and to assess the competition. Further, according to questionnaire responses, foreign trade shows provide up-to-the-minute information on trends and styles that strongly influence the U.S. market and provide opportunities to assess new developments in production technologies.

U.S. producers also reportedly offer various types of buyer-assistance programs to help generate business. Some suppliers offer consignment or guaranteed sales programs, for which the retailer pays only for what is sold. Such arrangements vary significantly from company to company, if offered, and usually require, at least, a long-standing relationship and a proven sales performance. Consignment programs aid the retailer, large or small, by allowing them to carry a larger assortment of products and eliminates the necessary investment in high-cost inventories. However, these programs raise the producer's costs, inventory exposure, and administrative costs to operate such programs. Cooperative advertising programs reportedly are also very important to buyers and are often directly related to the volume of purchases. Other assistance programs given to buyers by producers reportedly include volume rebates, absorption of some transportation costs, large order discounts, and various programs associated with new store openings. Training for store personnel, in-store sales-support services, and point-of-sale promotions are also offered as incentives to buyers.

According to questionnaire responses, most domestic manufacturers do not actively pursue export markets, nor do they dedicate a significant amount of resources toward developing them. Some respondents indicate that U.S. companies are not aggressive enough in approaching foreign markets. They indicate that strong and concentrated marketing efforts by foreign suppliers, targeting the United States, are very successful, as evidenced by increasing import penetration. Among the methods used by domestic producers to develop export markets are advertising in foreign publications, distributing press kits, soliciting orders through foreign trade shows, and contacts with U.S. and foreign Chambers of Commerce for business referrals. Some manufacturers also explore and enter into licensing agreements with foreign manufacturers. Others take advantage of lower labor costs in developing countries by exporting component parts for assembly abroad. They cite communication problems as an inhibiting factor in their penetration of foreign markets, along with the fluctuation in the value of the dollar that makes it difficult to quote and maintain prices.

Domestic producers also undertake various types of foreign activities to try and develop markets. Manufacturers' representatives occasionally travel abroad, but very few are familiar with the foreign marketplace. Attendance and exhibition at foreign trade shows is reportedly increasing and provides an opportunity to meet new suppliers and observe new merchandise, equipment, or technology. Such observations reportedly allow for the early formulation of consumer buying patterns and provide an opportunity to plan production to match them. Foreign sales offices or distribution centers are sometimes established if market conditions are deemed appropriate.

Channels of distribution.--Both U.S. producers and importers of precious jewelry utilized retail operations as their primary distribution method during 1982-86. According to the Jewelers Board of Trade, the number of jewelry retailers in the United States increased from 26,600 in 1983 to 32,500 in 1984 and then dropped to 32,400 in 1986. Questionnaire respones indicate that three-fourths of the combined value of domestic shipments and U.S. imports of precious jewelry were distributed through such operations in 1986, up from 71 percent in 1982. The share of U.S. producers' shipments sold to retail operations increased from 68 percent in 1982 to 76 percent in 1986 and the share of importers' shipments sold to retailer operations was 74 percent in each year. The following tabulation shows the share of total shipments sold by U.S. producers and importers through various channels of distribution (other than direct sales to the final consumer by retailing importers) for the

years 1982 and 1986 as reported by respondents to Commission questionnaires (in percent): 1/

Channel of distribution	Total shipments		Producers' shipments		Importers' shipments	
	1982	1986	1982	1986	1982	1986
Sales to:						
Manufacturers	7	5	10	9	2	1
Jewelry wholesalers	22	19	22	15	24	25
Retail operations	71	75	68	76	74	74
Department stores	7	8	8	10	5	5
Retail jewelers	46	51	34	46	62	58
Syndicated stores	2	2	2	3	1	2
Catalog showrooms	8	5	10	7	6	4
Other	9	9	14	11	1	6

Note.--Because of rounding, figures may not add to 100 percent.

The channels of distribution for shipments of precious jewelry changed somewhat from 1982 to 1986. The share of shipments sold to manufacturers, consisting primarily of findings and other parts for further processing, declined slightly during the period, from 7 percent in 1982 to 5 percent in 1986. The share of sales to wholesalers also declined during the period, from 22 percent to 19 percent, as domestic manufacturers increased direct sales to retailers. Conversely, the share of sales to retail jewelers, the principal outlet for all sales, rose from 46 percent in 1982 to 51 percent in 1986. U.S. importers' share of sales to other retail outlets, including mail-order and television shopping networks, increased from 1 percent to 6 percent over the period in response to declining orders from retail stores. 2/

As the price of gold and gold jewelry increased during the early 1980's, retail chains and department stores became more concerned about costs and decided to buy directly from suppliers and avoid the added margins from middlemen. For direct control of product selection, faster delivery time, and lower costs, these outlets began purchasing jewelry directly from manufacturers and/or importers, or imported directly, thus eliminating or curtailing the need for wholesalers. In doing so, retailers obtained faster delivery and more closely met the changing demands of the marketplace. Small manufacturers, which relied heavily on the wholesaler for marketing, were forced to shift limited resources toward marketing programs to accommodate direct-to-retailer marketing strategies in order to maintain a presence in the domestic market.

1/ On the basis of questionnaire responses of producers and importers of precious jewelry in 1982 and 1986, there were 95 responses for 1982 and 125 responses for 1986.

2/ For a more detailed discussion of television shopping networks see p. 4-4.

U.S. inventories.--Estimated data from Commission questionnaires indicate that the ratio of inventories to producers' shipments of precious jewelry decreased from 33 percent in 1982 to 26 percent in 1984 and then rose to 37 percent in 1986; in comparison, the ratio of inventories to shipments for durable goods industries 1/ declined annually from 19 percent in 1982 to 15 percent in 1985. An average of 79 percent of total inventories during the period consisted of finished jewelry products, and the remainder was composed of raw materials, principally gold and gemstones. The following tabulation shows the trend in estimated total inventories, precious jewelry product inventories and raw material inventories:

	Total inventories Million dollars	Index 1/	Precious jewelry products Million dollars	Index 1/	Raw materials Million dollars	Index 1/
1982...	972	100.0	771	100.0	201	100.0
1983...	994	102.3	832	107.9	162	80.6
1984...	890	91.6	693	89.9	197	98.0
1985...	936	96.3	713	92.5	223	110.9
1986...	1,225	126.0	973	126.2	252	125.4

1/ 1982=100.0.

The estimated value of precious jewelry product inventories overall increased 26 percent, from $771 million in 1982 to $973 million in 1986. The increase in such inventories results, in part, from increased production and greater inventories in response to structural changes in distribution channels. The increase in direct purchases by retailers has forced suppliers to maintain greater inventory levels in order to be able to fill orders more quickly, as well as to supply a sales force with samples.

The value of inventories of raw materials decreased 19 percent, from $201 million in 1982 to $162 million in 1983. Such inventories then increased an average of 18 percent per year throughout the period and amounted to $252 million in 1986. The share of raw materials inventories accounted for by precious metals declined from 61 percent in 1982 to 50 percent in 1986. This decline is the result of an increase in the use of delayed-price-settlement inventory financing programs, primarily consignment, by producers. The use of this type of inventory financing prevents inventory values from appearing in producers' financial statements. Conversely, the share of raw materials accounted for by gemstones increased from 36 percent in 1982 to 41 percent in 1986. This increase is partially explained by producers building inventories of raw gemstones anticipating increased sales. However, these sales never materialized because they were lost to imported products. The relative share of other raw materials increased from 3 percent to 8 percent and consist mainly of other base metals used in preparing alloys.

1/ Reported in the 1987 Statistical Abstract of the United States.

The following tabulation shows the trend in estimated inventories of all precious jewelry and that for precious-metal and gemstone:

	Precious jewelry products Million dollars	Index 1/	Precious-metal jewelry Million dollars	Index 1/	Gemstone jewelry Million dollars	Index 1/
1982...	771	100.0	759	100.0	12	100.0
1983...	832	107.9	817	107.6	15	125.0
1984...	693	89.9	676	89.1	18	150.0
1985...	713	92.5	698	92.0	15	125.0
1986...	973	126.2	954	125.7	19	158.3

1/ 1982=100.0.

Precious-metal jewelry accounted for an average of 98 percent of total product inventories and item breakdowns were very similar to those for all precious jewelry. On a product basis, rings accounted for over one-half of total inventories, declining slightly from 56 percent in 1982 to 55 percent in 1986. The greatest decline was registered in inventories of findings and clasps, from 19 percent to 13 percent. Inventories of earrings and other jewelry articles each rose from 8 percent to 12 percent, and 9 percent to 12 percent, respectively. Neckwear inventories decreased slightly from 8 percent to 6 percent.

With respect to gemstone jewelry, rings accounted for 81 percent of total inventories during the period. The relative share accounted for by earrings and other jewelry articles rose from 6 percent to 8 percent, and 3 percent to 5 percent, respectively, as neckwear inventories dropped from 10 percent to 6 percent, over the period.

Employment levels and trends.--The following tabulation shows the number of all employees, production workers, and the ratio of production workers to all employees in the precious jewelry industry during 1982-86:

Year	All employees	Index (1982=100)	Production workers	Index (1982=100)	Ratio of Production workers to all employees
1982.....	36,200	100.0	25,500	100.0	70
1983.....	36,200	100.0	25,500	100.0	70
1984.....	36,700	101.4	25,400	99.6	69
1985.....	37,200	102.8	25,300	99.2	68
1986.....	36,200	100.0	24,800	97.3	69

As reported by the Bureau of Labor Statistics (BLS), total employment in establishments producing precious jewelry remained at 36,200 workers in 1982 and 1983; employment of such workers then rose to 37,200 workers in 1985 before returning to 36,200 workers in 1986, resulting in no overall change during the period. The number of production workers also remained unchanged during 1982-83. However, it then decreased steadily during 1984-86, and

resulted in an overall decrease of 3 percent for the period. The share of all employees accounted for by production workers decreased slightly from 70 percent in 1982 to 69 percent in 1986. In comparison, production workers accounted for an average of 72 percent of all miscellaneous manufacturing industries employment over the period.

Most firms in the industry are small and employ less than 10 workers each. According to the 1982 Census of Manufactures, 70 percent of all establishments producing precious jewelry employed on average less than 10 people; another 24 percent of firms employed between 10 and 50.

Although most firms are small, those that are large account for the bulk of total employment. Those firms that average less than 10 employees accounted for only 14 percent of total industry employment in 1982. Those with between 10 and 50 accounted for 31 percent, and those with between 50 and 250, an additional 31 percent. Firms employing on average over 250 people accounted for the remaining 24 percent of total industry employment. The average hourly earnings of production workers increased steadily from $6.89 in 1982 to $8.14 in 1986, or by 18 percent.

There may be a relationship between the number of hours worked and productivity of the workforce. The average number of hours worked per week by production workers increased from 37.3 hours in 1982 to 38.0 hours in 1985, then slipped to 37.8 hours in 1986. Average overtime hours worked by production workers rose from 1.6 hours in 1982 to 2.3 hours per week in 1985 and then declined to 2.1 hours per week in 1986. Similarly, productivity increased steadily from 1982-85 and then declined slightly in 1986. The trend in the productivity index followed a pattern similar to that of U.S. producers' shipments. The following tabulation shows productivity measured in real output per production worker during the period and the producer price index for precious jewelry (1982=100.0):

Year	Productivity 1/	Precious jewelry producer price index 2/
1982.....	100.0	100.0
1983.....	102.0	105.9
1984.....	115.4	102.7
1985.....	118.2	101.5
1986.....	117.6	103.9

1/ Calculated from responses to Commission questionnaires and official statistics of the Bureau of Labor Statistics.
2/ Calculated from official statistics of the Bureau of Labor Statistics.

The productivity of workers in the industry rose annually during 1982-85, and after the slight decline in 1986 registered an overall increase of 18 percent. Conversely, producer prices, which rose 6 percent during 1982-83, decreased the next two years before rising in 1986, and registered an overall increase of 4 percent. For comparative purposes, similar indices for all manufacturing industries were calculated, and show the following results (1982=100.0):

Year	Productivity 1/	All manufacturing industries producer price index 2/
1982.....	100.0	100.0
1983.....	108.3	101.0
1984.....	114.3	103.7
1985.....	119.3	104.0
1986.....	122.9	101.5

1/ Calculated from the total manufacturing output per person index derived by the U.S. Department of Commerce.
2/ Calculated from official statistics of the Bureau of Labor Statistics.

The steady increase in worker productivity in "all manufacturing" industries from 1982-86, of 23 percent, was greater than the productivity increase of precious jewelry workers over the same period. Moreover, producer prices for all manufacturing industries rose during 1982-85, but declined slightly in 1986 for a 1.5-percent increase over the period.

Chapter 6. Levels and Trends in U.S. International Trade

6.1. Trade balance

The U.S. trade deficit in precious jewelry showed an average annual increase of 25 percent during 1982-86, rising to $1.8 billion in 1986 (table 4-1). Although the value of U.S. exports increased an average of 7 percent per year during the period, the deterioration in the trade balance resulted from a 23-percent-per-year increase in imports. In absolute value, the increase in imports, $1.1 billion, was 33 times greater than the $34 million increase in exports. Such a trend was comparable with, but not as dramatic as that of all miscellaneous manufactures, as such imports increased $19 billion compared with an $834 million increase in exports, or 26 times greater.

The trade deficit in precious-metal jewelry also more than doubled during the period, from $733 million to $1.6 billion; however, the larger growth was experienced in the gemstone jewelry trade deficit as it was 24 times greater in 1986 than in 1982. That growth resulted from a 36-percent annual increase in imports combined with a 3-percent annual decrease in exports. The overall growth in the trade deficit can be attributed to the strength of the dollar, early in the period, which allowed foreign suppliers to obtain market penetration. Later in the period, when the advantage that was gained from the strength of the dollar deteriorated, foreign suppliers had already established themselves, and, although the rate of increase in imports decreased, the demand for their products was steady.

6.2. U.S. exports

Questionnaire responses were insufficient to accurately depict detailed trends in exports of precious jewelry. However, official statistics of the U.S. Department of Commerce show that U.S. exports of precious jewelry rose from 1982 to 1983, and then decreased in 1984 before rising to $148 million in 1986, or by 30 percent overall. Exports to nearly all the major U.S. markets, except Switzerland and Hong Kong, showed an increase during the period (table 6-1). The relative change in exports over the period to the top five markets of 1986 are illustrated in figures 6-1 and 6-2, respectively.

Questionnaire responses reported that 51 percent of domestic exports of precious jewelry in 1982 were accounted for by findings, 40 percent by rings, and 7 percent by neckwear (figs. 6-3 and 6-4). However, it should be noted that responses appeared to be heavily weighted toward precious-metal jewelry. By 1986, the share accounted for by findings increased to 59 percent, whereas that of neckwear rose to 13 percent. Conversely, the share accounted for by rings decreased to 25 percent.

The ratio of exports to estimated domestic shipments for all precious jewelry fluctuated during the period but overall remained at 4 percent. The ratio for precious-metal products followed a similar pattern; however, it increased slightly from 3 percent in 1982 to 4 percent in 1986. In gemstone jewelry, the absolute level of the ratio was greater than that in precious jewelry, but it declined slightly from 6 percent in 1982 to 5 percent in 1986. Major constraints on U.S. exports during the period included strong competition from foreign manufacturers and the relative strength of the U.S.

Table 6-1
Precious jewelry: U.S. exports of domestic merchandise, by principal markets, 1982-86

Market	1982	1983	1984	1985	1986	Share of U.S. total 1982	Share of U.S. total 1986	Change, 1986 from 1982
	1,000 dollars					Percent		
Switzerland...	68,931	63,724	42,021	46,608	53,240	60.2	35.9	-22.8
Dominican Republic....	16	441	1,921	15,147	22,162	1/	14.9	1,384.1
Japan.....	8,551	9,239	10,022	8,706	15,204	7.5	10.3	77.8
Haiti.....	1,455	2,062	1,928	6,690	9,694	1.3	6.5	566.3
France.....	3,935	5,342	7,386	10,367	8,970	3.4	6.0	128.0
United Kingdom.....	2,736	3,401	3,510	2,289	7,605	2.4	5.1	178.0
Hong Kong.....	6,986	5,355	4,528	4,360	5,387	6.1	3.6	-22.9
Mexico.....	2,224	747	953	1,904	3,689	1.9	2.5	65.9
All other.....	19,654	27,083	22,963	17,498	22,545	17.2	15.2	14.7
Total.....	114,488	117,394	95,231	113,569	148,497	100.0	100.0	29.7

1/ Less than 0.5 percent.

Note.--Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

dollar vis-a-vis foreign currencies, which resulted in a price disadvantage in foreign markets for U.S.-made precious jewelry.

Some questionnaire respondents reported that exchange-rate fluctuations made it difficult to quote and maintain prices of goods to foreign customers. Additionally, respondents reported varying degrees of difficulty in entering foreign markets. In France, the United Kingdom, and Switzerland, strict assays of precious-metal products were reported, and any deviation from the quality marked on any item in a shipment resulted in rejection of the entire shipment. The return of the shipment was reportedly made after a long delay and/or destruction of the products to prevent illegal entry. Licensing requirements in some countries also reportedly made it difficult for U.S. producers to penetrate certain foreign markets (see ch. 8).

6.3. U.S. imports

There are two main types of precious jewelry importers--those that import as their sole business, including large corporations, medium-sized firms, small shops, and self-employed individuals, and those that do so to supplement their main business. The latter include U.S. producers who import component parts which they need as intermediate products, and firms that import finished products for resale as their own, including producers filling out a line and, increasingly, retailers or groups of retailers attempting to reduce their costs and increase their purchasing power by pooling their resources and

Figure 6-1
Precious jewelry: U.S. exports in 1982, to major markets in 1986

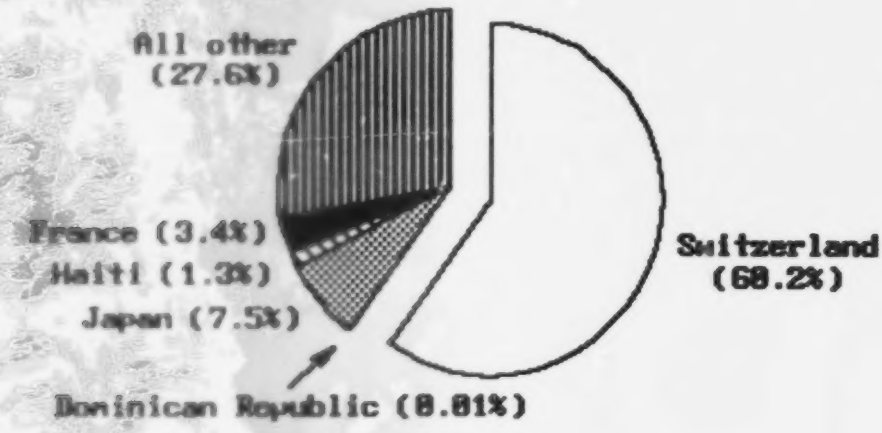

Figure 6-2
Precious jewelry: U.S. exports to major markets, 1986

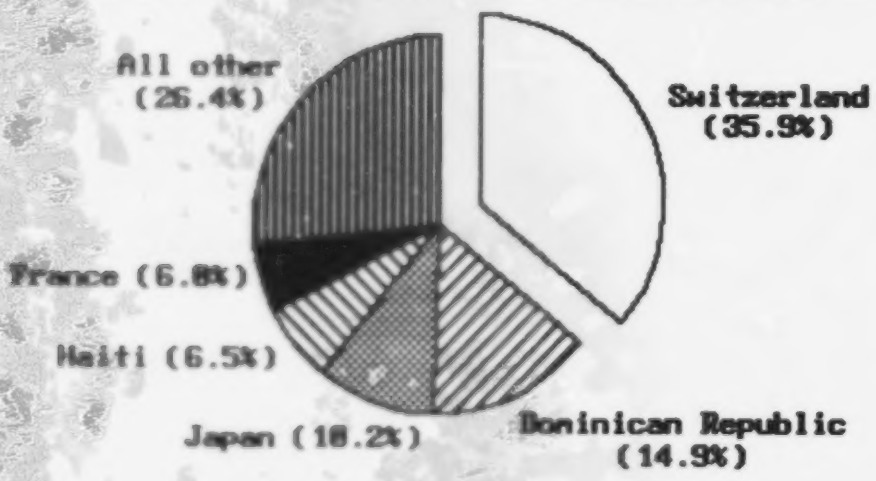

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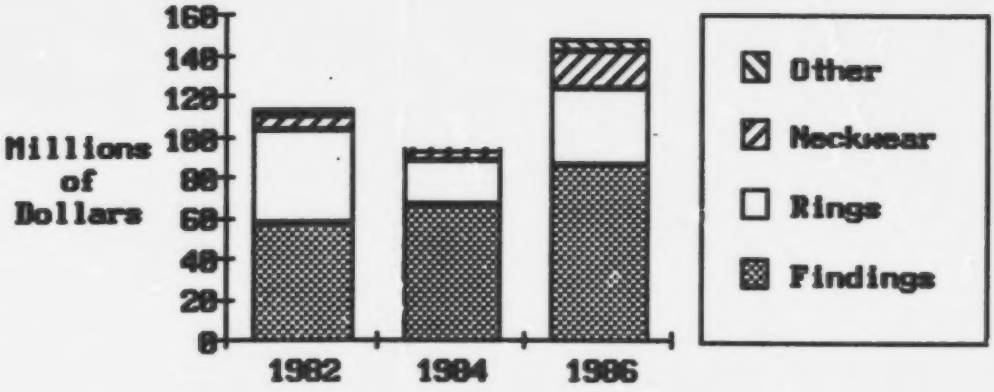
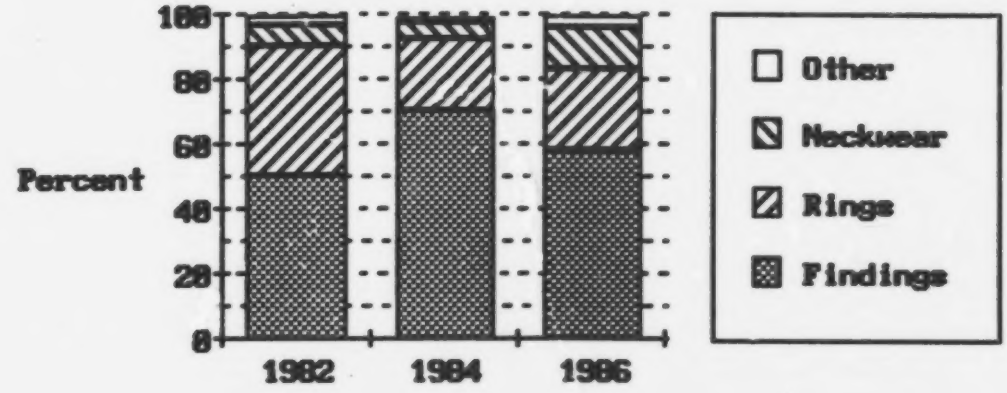
Figure 6-3
Precious jewelry: U.S. exports, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for export data and official statistics of the U.S. Department of Commerce.

Figure 6-4
Precious jewelry: Share of U.S. exports, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for export data and official statistics of the U.S. Department of Commerce.

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maximizing the amount of products they can buy. This type of importer is also increasingly diversifying into other forms of business ventures in supplier countries to ensure stable product supplies at reasonable and predictable prices.

The decline in the price of gold and the appreciation of the U.S. dollar during most of 1982-86 resulted in an increase in the world supply of precious jewelry, causing U.S. imports to increase (table 6-2). The share of total imports accounted for by Italy, the leading U.S. supplier during the period,

Table 6-2
Precious jewelry: U.S. imports for consumption, by principal sources, 1982-86

Source	1982	1983	1984	1985	1986	Share of U.S. total 1982	Share of U.S. total 1986	Change, 1986 from 1982
	1,000 dollars					Percent		
Italy	511,381	482,293	646,605	1,004,994	1,036,982	59.7	52.2	102.8
Hong Kong	80,010	90,575	124,909	152,668	194,211	9.3	9.8	142.7
Israel	91,790	96,954	113,896	137,181	134,407	10.7	6.8	46.4
Switzerland	55,926	56,811	71,794	91,037	120,553	6.5	6.1	115.6
Thailand	6,956	13,932	26,897	43,648	111,631	0.8	5.6	1,504.8
Dominican Republic	3,010	5,072	17,755	40,492	63,336	.4	3.2	2,004.2
Peru	18,375	23,768	34,075	43,792	47,308	2.1	2.4	157.5
Mexico	3,366	2,397	4,218	16,532	37,301	.4	1.9	1,008.2
All other	85,893	106,148	156,005	197,661	240,052	10.0	12.1	179.5
Total	856,707	877,951	1,196,154	1,728,005	1,985,781	100.0	100.0	131.8

Note.--Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

decreased from 60 percent in 1982 to 52 percent in 1986 (figs. 6-5 and 6-6). In value, such imports increased $526 million over the period and passed the $1 billion mark in 1985. In 1986, such imports amounted to slightly over $1 billion, more than five times greater than the second leading supplier. Hong Kong and Isreal were the second and third leading suppliers in 1986, reversing their positions since 1982 and accounting for 10 percent and 7 percent of total imports, respectively. The reversal was the result of a doubling of imports from Hong Kong combined with a modest 46-percent increase in imports from Isreel. Imports from the Dominican Republic, Thailand, and Mexico registered the largest growth over the period among the top 10 suppliers in 1986. Imports from these countries increased from a minimum of 10 times their value in 1982 to over 20 times. The relative share of total imports of precious jewelry accounted for by precious-metal products

Figure 6-5
Precious jewelry: U.S. imports in 1982, from major U.S. suppliers in 1986

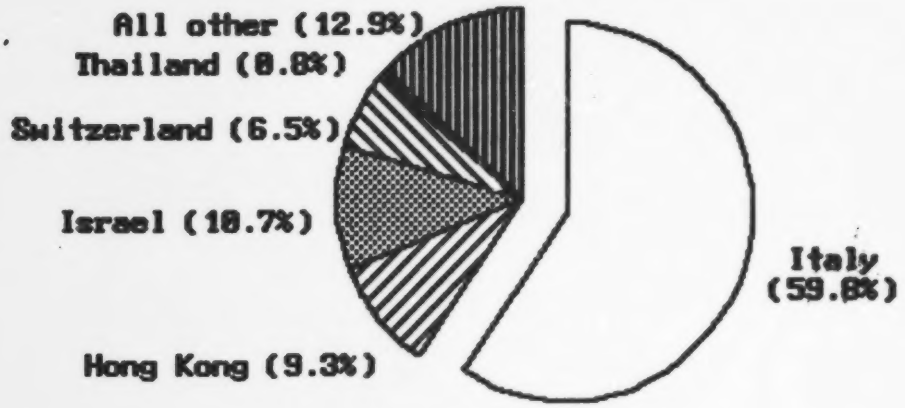
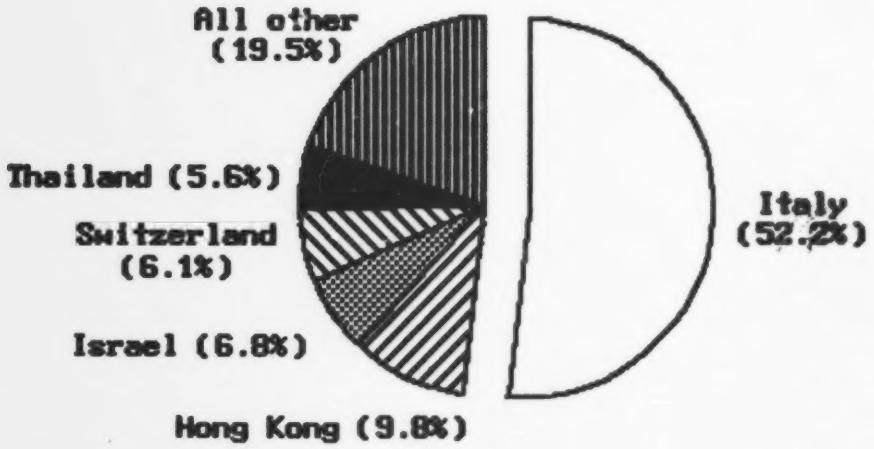


Figure 6-6
Precious jewelry: U.S. imports from major suppliers, 1986



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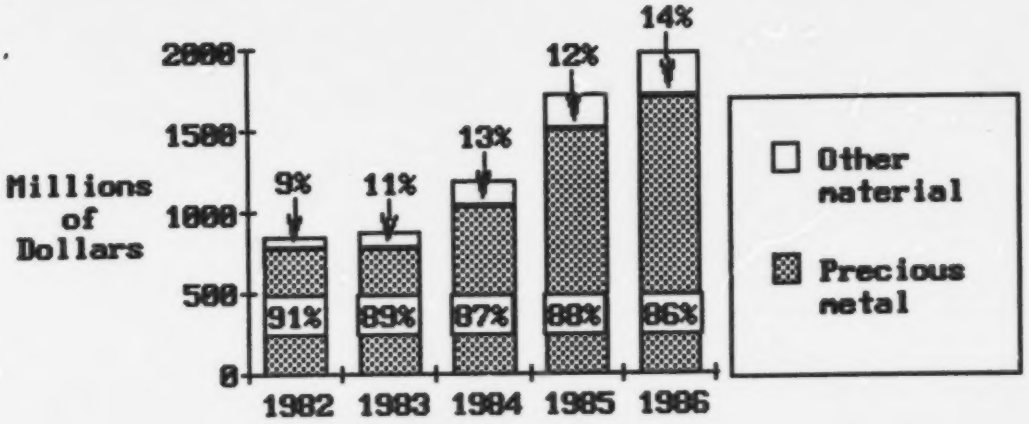
fluctuated during the period but averaged 88 percent (fig. 6-7). Other jewelry articles, primarily brooches and rings, accounted for the bulk of the increase in gemstone jewelry imports.

Figure 6-7
Precious jewelry: U.S. imports, by material, 1982-86



Source: Official statistics of the U.S. Department of Commerce.

The principal suppliers, Italy, Hong Kong, Israel, and Switzerland, benefited from the public's perception of better quality, wider selection of styles, and superior designs relative to domestic products. But of equal or greater importance, these products were reportedly lower priced. According to domestic sources, Italian chain is produced at a significantly lower cost than that made domestically, partly because of Italy's position as the world's leading designer and supplier of chainmaking machinery. Precious-metal rings supplied from Hong Kong benefited from lower labor rates and an increasing reputation for quality. Chains from Israel are considered to be of consistent quality and are reportedly competitively priced.

Based on questionnaire responses, neckwear accounted for the largest share of total imports in 1982, 57 percent (figs. 6-8 and 6-9). The vast majority of these were made of precious metal. Findings and clasps amounted to 8 percent of imports; rings, 5 percent; earrings 3 percent; and the remaining 28 percent of imports were composed of other jewelry items. The relative composition of imports changed slightly over the period as the share accounted for by neckwear dropped to 55 percent in 1986, as imports of other jewelry articles and rings rose to 31 percent and 7 percent, respectively.

Imports from Italy.--Imports of precious jewelry from Italy declined by 6 percent from 1982 to 1983, then increased at an annual average rate of 29 percent during 1983-86, for an overall increase of 103 percent. According to questionnaire respondents, nearly all such imports (98 percent) during the period were made of precious metals.

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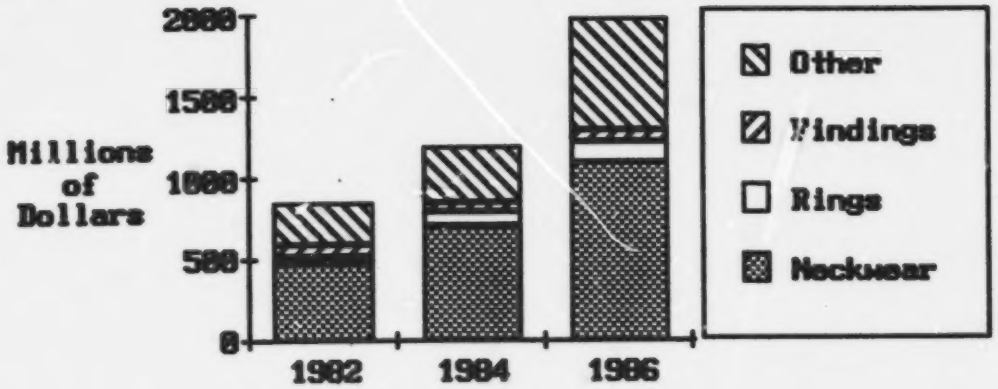
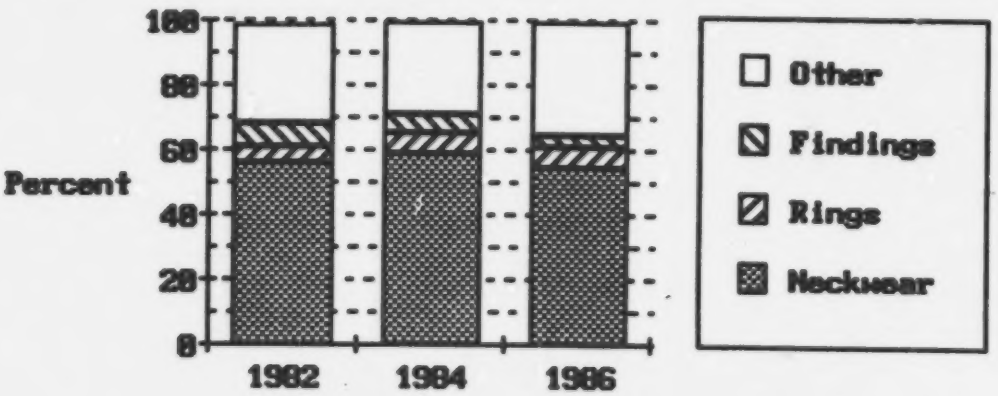
Figure 6-8
Precious jewelry: U.S. imports, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

Figure 6-9
Precious jewelry: Share of U.S. imports, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

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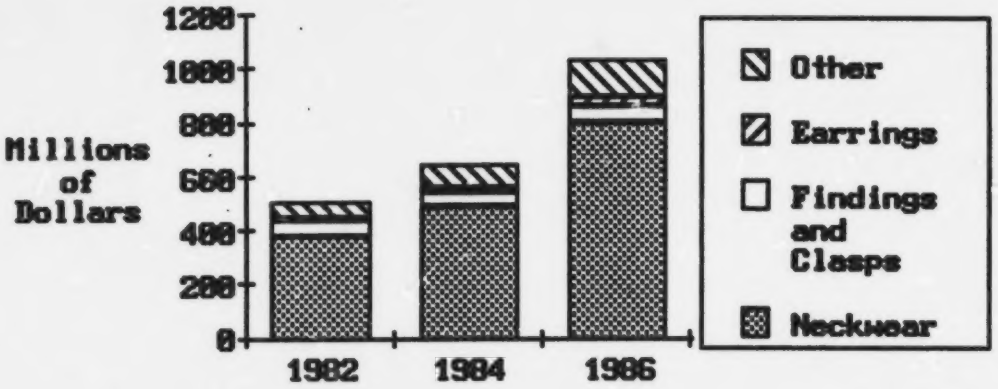
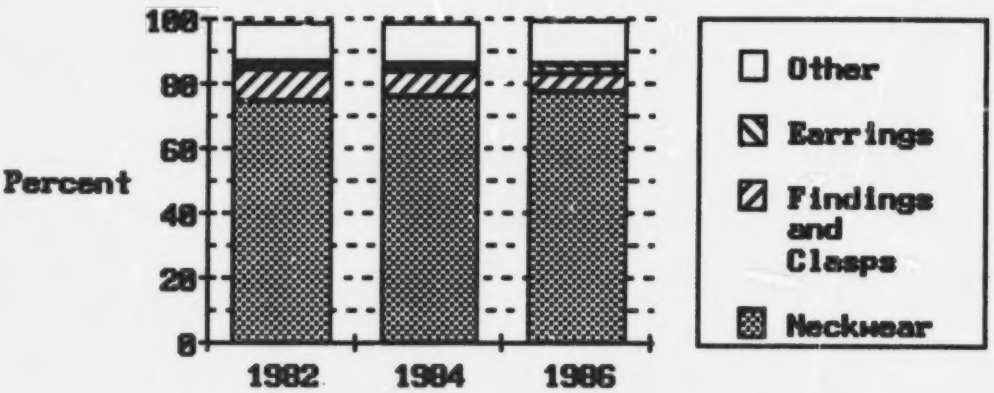
In 1982, neckwear accounted for 75 percent of the total imports from Italy; findings and clasps (virtually all clasps), 11 percent; other jewelry articles, 10 percent; and earrings, 2 percent (figs. 6-10 and 6-11). By 1986,

Figure 6-10
Precious jewelry: U.S. imports from Italy, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

Figure 6-11
Precious jewelry: Share of U.S. imports from Italy, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

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the share accounted for by neckwear increased to 78 percent, whereas that for other jewelry articles and earrings rose to 11 percent and 3 percent, respectively. Conversely, the share for findings and clasps decreased to 6 percent. The share accounted for by rings and religious articles remained at 1 percent each during the period.

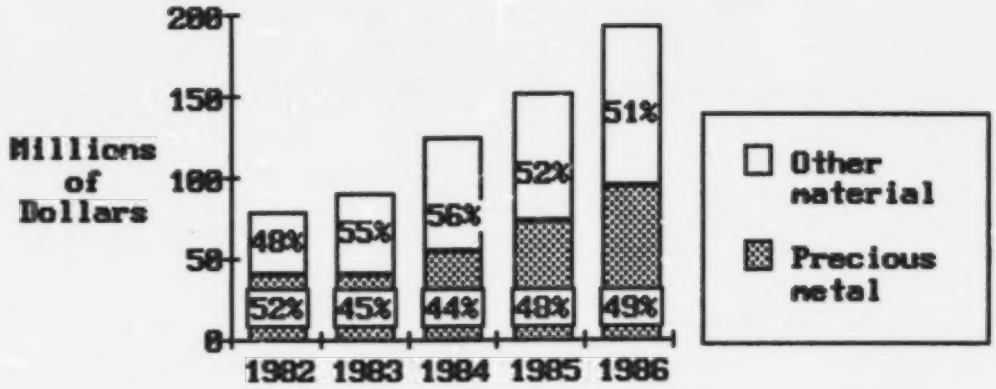
Over three-fourths of imports by nonproducers were accounted for by neckwear as such imports increased during the period from 77 percent to 79 percent. The shares accounted for by rings, earrings, and other jewelry articles all increased slightly during the period to 1 percent, 3 percent, and 10 percent, respectively, and the shares accounted for by religious articles and findings and clasps (all clasps), declined slightly to 1 percent and 6 percent, respectively.

Of those imports by U.S. producers, the share accounted for by neckwear was significantly less, although it also rose from 23 percent to 30 percent over the period. The largest share of imports was accounted for by other jewelry articles as it decreased from 63 percent to 57 percent over the period. Other jewelry articles consisted primarily of bracelets and other chain products. The share accounted for by rings rose from less than 0.5 percent in 1982 to 4 percent in 1986, and that for earrings and findings and clasps (all findings) declined from 9 percent to 7 percent, and 4 percent to 3 percent, respectively. No imports of religious articles by U.S. producers were reported by questionnaire respondents for any year of the period.

Questionnaire respondents cited a number of reasons for the popularity of Italian-made jewelry, particularly neckwear. Italian products were perceived to be better designed and of better quality than most domestic and other imported products. Certain Italian products were reported to be lighter in weight than competing products, yet they gave the appearance of being heavier. These Italian products were also available in a variety of different finishes. The prices of the Italian products were also reportedly highly competitive in light of the other factors.

Imports from Hong Kong.--Imports of precious jewelry from Hong Kong increased by 143 percent from 1982 to 1986 as the share accounted for by precious-metal products declined from 52 percent to 49 percent (fig. 6-12). Imports accounted for by U.S. producers amounted to 47 percent of the total imports in 1982. Their share dropped to 21 percent in 1983 and has since steadily increased to 39 percent in 1986. The decrease in 1983 can be partially explained by entry of nonproducing importers, primarily retailers. On the basis of questionnaire responses, rings accounted for nearly two-thirds, 65 percent, of the total imports from Hong Kong in 1982

Figure 6-12
Precious jewelry: U.S. imports from Hong Kong, by material, 1982-86



Source: Official statistics of the U.S. Department of Commerce.

(figs. 6-13 and 6-14), 82 percent of which were made of precious metals. Neckwear and earrings accounted for approximately 18 percent and 10 percent, respectively of the total 1982 imports; other jewelry articles accounted for 7 percent and the remainder was divided between findings and clasps (mostly clasps).

Rings continued to be the most important product category of imports from Hong Kong in 1986, although the share decreased to 61 percent. The share accounted for by other jewelry articles rose to 15 percent, making it the second leading category. Neckwear slipped to third with a 13-percent share, and earrings rose slightly to 11 percent. Over one-half of the imports of other jewelry articles were made of precious metals and consisted primarily of brooches. Low production costs and an improving reputation for quality have made Hong Kong a leading supplier of precious-metal rings in all major world markets.

Imports from Israel.--Imports of precious jewelry from Israel showed the slowest growth among the major U.S. suppliers during 1982-86 as they increased by 46 percent to $134 million in 1986. The share accounted for by precious-metal products decreased from 98 percent to 89 percent overall (fig. 6-15). Similarly, the share of imports by U.S. producers fluctuated during the period and registered a decline from 9 percent in 1982 to 6 percent in 1986. According to questionnaire responses, in 1982, neckwear accounted for 79 percent of the total imports; other jewelry articles, 11 percent;

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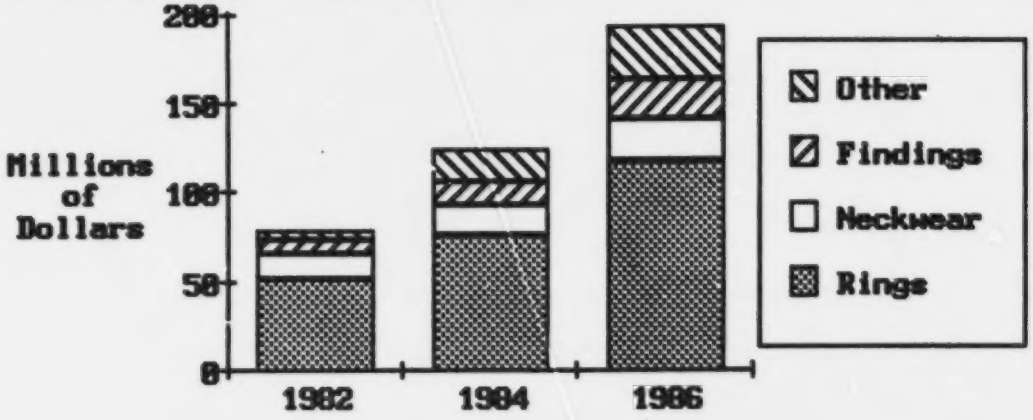
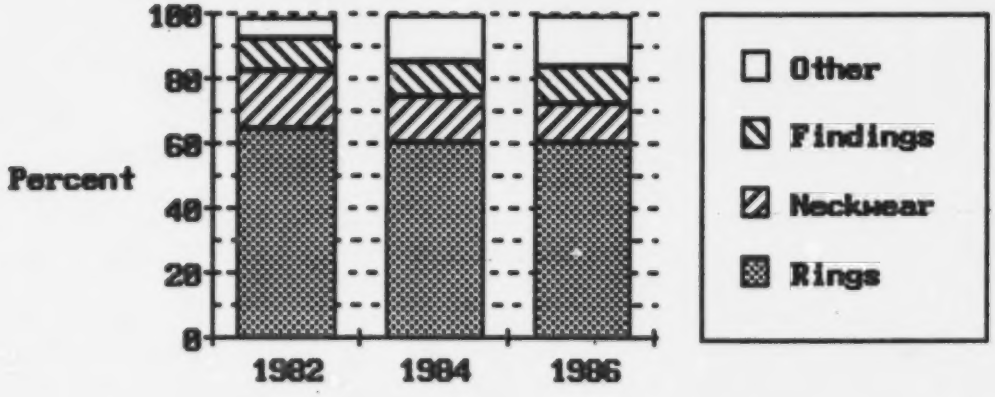
Figure 6-13
Precious jewelry: U.S. imports from Hong Kong, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

Figure 6-14
Precious jewelry: Share of U.S. imports from Hong Kong, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

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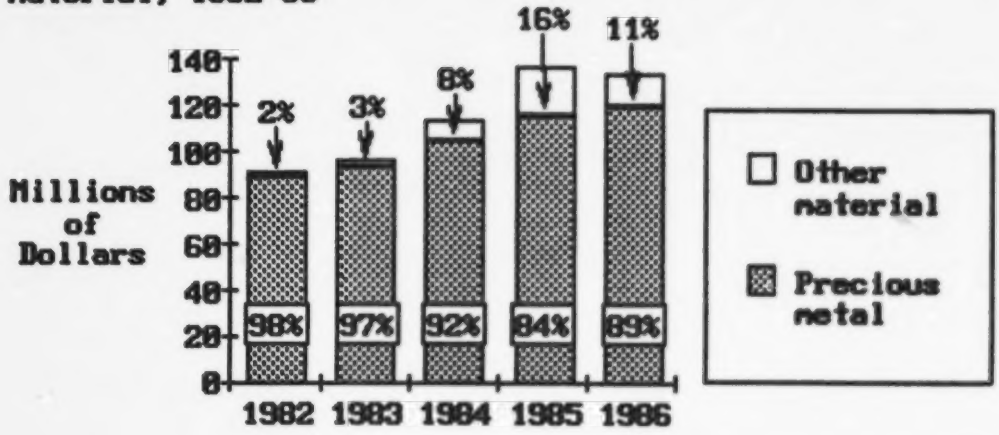
Figure 6-15
Precious jewelry: U.S. imports from Israel, by material, 1982-86



Source: Official statistics of the U.S. Department of Commerce.

rings, 7 percent; and earrings, 2 percent (figs. 6-16 and 6-17). The relative share of products did not change significantly over the period, as neckwear continued to account for 79 percent of total imports in 1986. The share accounted for by other jewelry articles increased to 14 percent, whereas that for rings dropped to 5 percent. The share for earrings was unchanged at 2 percent. Israeli chains are reportedly of about equal quality to those produced domestically, but lower in quality than those from Italy. Although their styles are generally basic, these chains are reportedly lower priced because of Israel's low labor costs and their duty-free status under the U.S. GSP.

Imports from Switzerland.--Imports of precious jewelry from Switzerland more than doubled during 1982-86 and amounted to $121 million in 1986, 6 percent of the total U.S. imports. Precious-metal jewelry accounted for an average of approximately 95 percent of such imports during 1982-86

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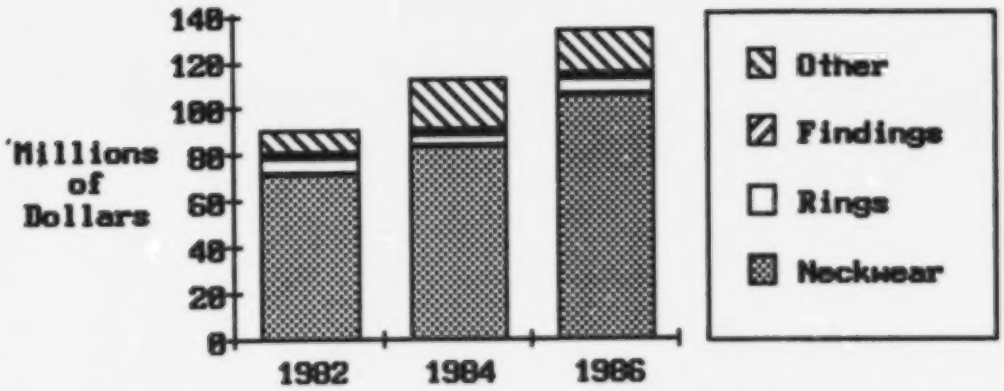
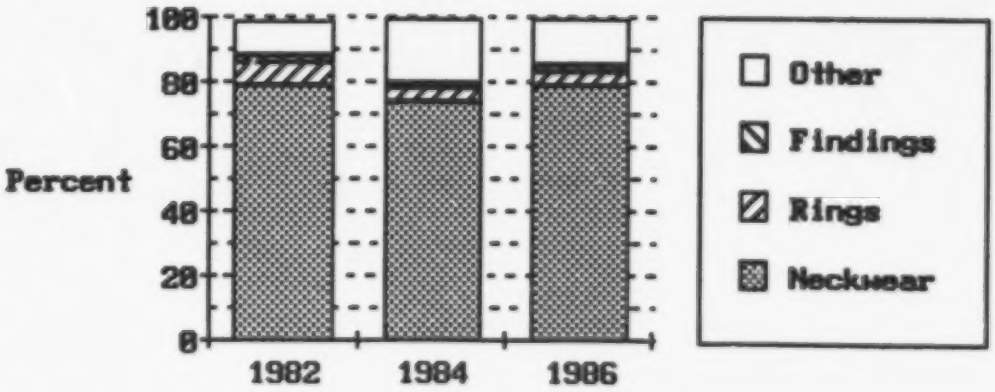
Figure 6-16
Precious jewelry: U.S. imports from Israel, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

Figure 6-17
Precious jewelry: Share of U.S. imports from Israel, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

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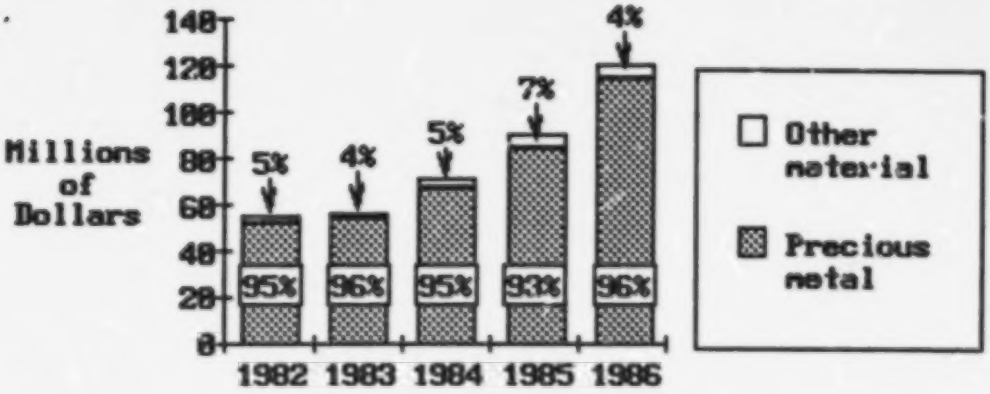
(fig. 6-18). The product categories of Swiss imports of precious jewelry also did not change significantly during the period. Other jewelry articles constituted 99 percent of the total imports in 1982 and declined slightly over

Figure 6-18
Precious jewelry: U.S. imports from Switzerland, by material, 1982-86



Source: Official statistics of the U.S. Department of Commerce.

the period to 97 percent in 1986. These articles consisted mainly of precious-metal watch bracelets attached to expensive watches. Neckwear accounted for the remaining 1 percent of total imports in 1982 and 3 percent in 1986. Virtually 100 percent of the U.S. imports from Switzerland were by nonproducing importers, primarily watch importers that are not jewelry importers.

Imports from other countries.--U.S. precious jewelry imports from all other countries increased more than threefold during 1982-86, from $118 million to $500 million, an annual average increase of almost 44 percent. The largest percentage increase occurred during the 1983-84 period as a result of precious-metal jewelry imports, primarily neckwear. Imports from such countries accounted for an increasing share of the total imports as they accounted for 14 percent in 1982 and 25 percent in 1986. The relative share of total U.S. imports from other countries by U.S. producers dropped from 22 percent in 1982 to 9 percent in 1984 and then steadily increased to 13 percent in 1986.

Imports from the Dominican Republic registered the largest growth during the period as, in 1986, they were more than 20 times their value in 1982. Such imports were primarily precious-metal chain products, as some U.S. producers reportedly entered into joint production arrangements. In addition, some foreign producers opened chain manufacturing facilities, reportedly to take advantage of U.S. preferential tariffs. Concurrently, imports from Thailand grew during the period by more than 15 times their 1982 value and

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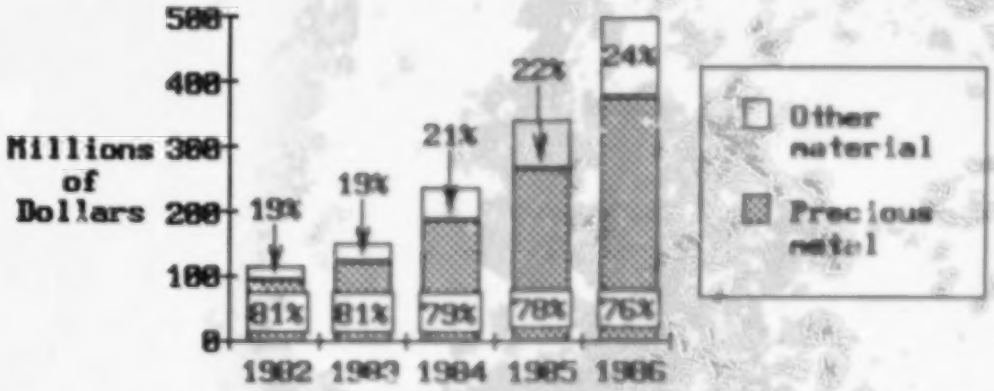
amounted to $112 million in 1986. This growth was primarily registered in imports of jewelry incorporating gemstones and resulted from a number of Thai Government incentive programs to develop the local industry. Such programs were reportedly designed to attract foreign investment, including that from various U.S. organizations that include producers and retail chain stores. Imports from Mexico also increased more than tenfold and amounted to $37 million in 1986. The bulk of these imports were accounted for by precious-metal jewelry products. Other developed countries were the largest losers of market share during this period, even though such imports from these countries generally increased.

The share of precious-metal jewelry from these countries decreased from 81 percent in 1982 to 76 percent in 1986 (figure 6-19). According to

Figure 6-19
Precious jewelry: U.S. imports from all other countries, by material, 1982-86



Source: Official statistics of the U.S. Department of Commerce.

questionnaire responses, in 1982, approximately 33 percent of such imports were accounted for by neckwear, nearly all of which were made of precious metal (figs. 6-20 and 6-21). Earrings accounted for an additional 30 percent, rings accounted for 24 percent, and other jewelry articles for 13 percent. Precious-metal products accounted for 88 percent of the total earrings imported; however, only 29 percent of imported rings. By 1986, the share of total imports accounted for by neckwear increased to 35 percent; however, rings became the leading product category as their share of total imports increased to 37 percent. Other jewelry articles' relative share also rose to 15 percent, however, that accounted for by earrings decreased to 13 percent. In 1986, precious-metal products made up 72 percent of imported rings and an even greater share of neckwear, 85 percent; other jewelry articles, 84 percent; and earrings, 73 percent.

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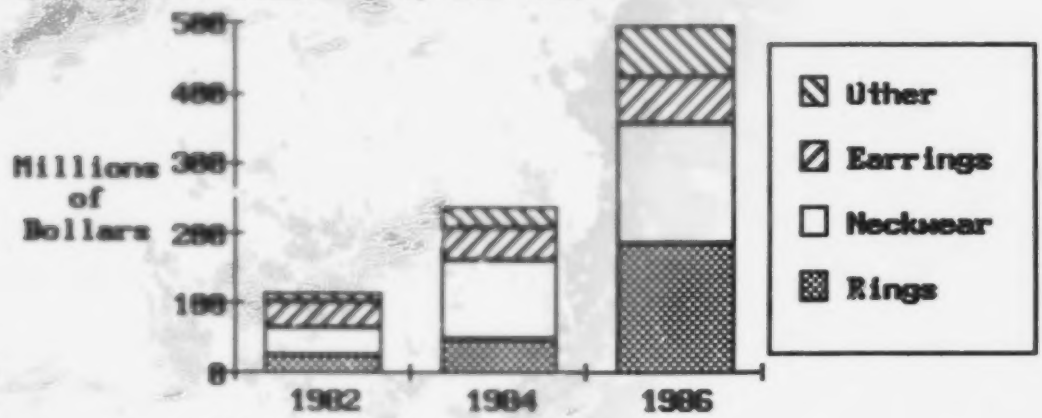
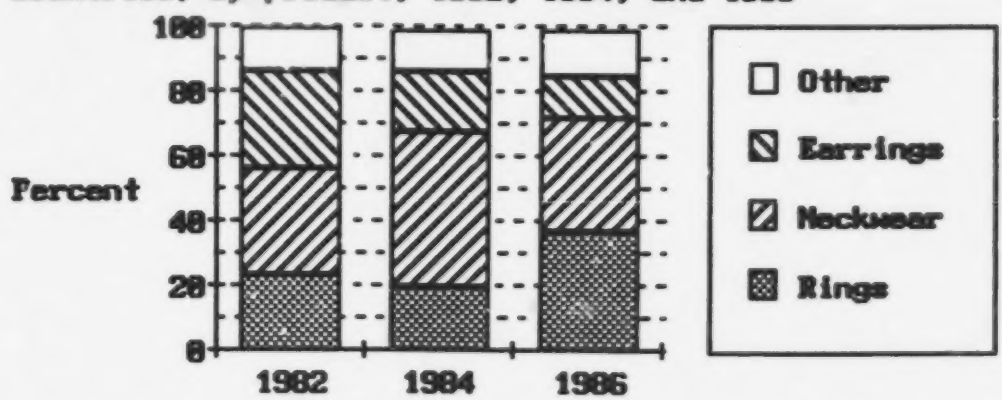
Figure 6-20
Precious jewelry: U.S. imports from other countries, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

Figure 6-21
Precious jewelry: Share of U.S. imports from other countries, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the of the U.S. Department of Commerce.

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Imports by U.S. producers showed the most significant product shift as the share of their imports accounted for by rings doubled from 15 percent to 33 percent over the period, and that of earrings declined from 36 percent to 13 percent. Other articles, primarily brooches, also increased from 7 percent to 12 percent.

Imports under the Generalized System of Preferences (GSP) 1/

Total U.S. imports of precious jewelry under the GSP increased 170 percent from $141 million in 1982 to $381 million in 1986 (table 6-3). The greatest growth occurred in GSP imports from Thailand and the Dominican

Table 6-3
Precious jewelry: U.S. imports for consumption under the GSP, 1982-86

Source	1982	1983	1984	1985	1986	Share of U.S. total 1982	Share of U.S. total 1986	Change, 1986 from 1982
	1,000 dollars					Percent		
Thailand.....	6,557	13,138	25,543	41,986	107,086	4.6	28.1	1,533.2
Israel.....	89,468	96,253	112,708	123,017	95,514	63.4	25.1	6.8
Peru.....	16,196	23,647	33,218	42,906	47,082	11.5	12.4	190.7
Mexico.....	3,105	1,972	2,812	10,723	33,244	2.2	8.7	970.9
Yugoslavia.....	2,214	2,834	5,232	10,697	18,083	1.6	4.7	716.8
Dominican Republic.....	73	71	1,344	6,106	13,331	.1	3.5	18,161.6
Singapore.....	1,693	893	1,684	4,892	10,645	1.2	2.8	528.8
Lebanon.....	10,270	3,666	1,491	5,927	10,605	7.3	2.8	3.3
Korea.....	1,492	697	1,408	3,555	6,598	1.1	1.7	342.2
All other.....	10,011	20,527	38,686	36,046	39,024	7.1	10.2	289.8
Total.....	141,078	163,697	224,126	285,856	381,212	100.0	100.0	170.2

Note.--Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Republic. GSP imports from Thailand, the leading U.S. supplier of precious jewelry under the GSP in 1986, increased approximately 100 percent per year during 1982-86. Thailand replaced Israel as the leading U.S. supplier under the GSP in 1986. Imports from Israel increased 7 percent over the period and actually declined in 1986. The decrease in GSP imports from Israel resulted,

1/ The GSP program affords nonreciprocal tariff preferences to developing countries to aid their economic development and to diversify and expand their production and exports. The U.S. scheme of the GSP, enacted in title V of the Trade Act of 1974 and renewed in the Trade and Tariff Act of 1984, applies to merchandise imported on or after Jan. 1, 1976, and before July 4, 1993. It provides duty-free entry to eligible articles imported directly from designated beneficiary developing countries.

in part, from Israel's exclusion on certain precious jewelry items combined with a decrease in demand for their chain products. GSP imports from Peru more than doubled over the period primarily as a result of increased exports of precious-metal chain products.

A number of countries lost GSP eligibility for precious jewelry products during 1982-86, causing a decline in imports from some of these countries after 1984 (see table 6-4).

Table 6-4
Chronological presentation of GSP eligibility of imports, by country and TSUS item, 1981-87

Country	TSUS item	1981	1982	1983	1984	1985	1986	1987
Hong Kong.....	740.11	X	D	D	D	D	D	D
	740.12	X	D	D	D	D	D	D
	740.13	X	D	D	D	D	D	D
	740.14	X	D	D	D	D	D	E 1/
	740.15	X	D	D	D	E	E	E
Israel.....	740.11	X	D	D	D	D	D	D
	740.70	X	R	N	N	N	N	N
Thailand.....	740.14	N	N	N	N	N	N	*
Peru.....	740.11	N	N	*	E	R	N	N

Legend:

X = Excluded from GSP preferential treatment.
E = Exceeded competitive-need limits, no change in exclusion.
D = Eligible for redesignation, but denied.
R = Redesignated as eligible for preferential tariff treatment.
N = No change in eligibility.
* = Exceeded competitive-need limits, new exclusion.

1/ A country automatically loses its GSP eligibility with respect to a product if U.S. imports from that country either (1) account for 50 percent or more of the value of total U.S. imports of the product, or (2) exceed a certain dollar value, which is annually adjusted in proportion to changes in the nominal Gross National Product (GNP). The competitive-need value limit based on 1986 trade was $71.4 million and is applicable to imports in 1987. However, in 1986, if a country has been found sufficiently competitive in the product, a lower competitive-need limit of 25 percent or more of the value of total U.S. imports of the product, or $28.2 million, applies. The exclusion for Hong Kong is based on the reduced competitive-need limits. The competitive-need limit can be waived by the President if imports of a product do not exceed a value limit that is adjusted annually by a percentage that depends upon the percent of change in the U.S. GNP compared with the GNP in 1979. That value was $8.4 million in 1986.

Changes in GSP eligibility primarily affect U.S. imports of chain products because of the number of available TSUS item numbers provided for chain products. For example, chain products can be classifiable under any of four item numbers (740.11, 740.12, 740.13, and 740.70), and, often, a given

product can be altered slightly to qualify under any of them. However, the bulk of precious jewelry articles, other than chain, enter under basket categories such as TSUS items 740.14 and 740.15 that, therefore, provide higher competitive-need limits on a product basis. A beneficiary country that specializes in a certain type of product, other than chain, is far more likely to exceed the value limits than the percentage requirements on these basket categories, as was the case with Thailand under TSUS item 740.14 in 1986.

Hong Kong has been ineligible for preferential tariff treatment under the GSP for TSUS items 740.11 through 740.15 since March 31, 1981, when these item numbers were first created from TSUS item 740.10. Although imports from Hong Kong under TSUS item 740.15 were redesignated as eligible articles for 1985 trade, they have exceeded the statutory competitive-need limits through 1986. Further, imports from Hong Kong under TSUS item 740.14 in 1986 were deemed sufficiently competitive, made subject to the reduced limits, and exceeded them. Israel was excluded from GSP duty-free treatment with respect to TSUS items 740.11 and 740.70 on March 31, 1981; however, imports from Israel under item 740.11 have remained at competitive levels. Although these imports have been eligible for redesignation to GSP preferential treatment, it has been denied each year during the period under review. Imports from Israel under TSUS item 740.70 were redesignated as GSP eligible in 1982 and there has been no change since. Peru exceeded the competitive-need limits under TSUS item 740.11 based on 1982 trade and was excluded from GSP eligibility in 1983. However, although such imports from Peru continued to exceed the limits in 1984, by 1985 they had sufficiently declined to allow Peru to be redesignated as eligible in 1986.

According to official statistics of the U.S. Department of Commerce, the major suppliers of GSP imports were also among the leading suppliers of all precious jewelry during the period. The share of U.S. imports under the GSP to total U.S. imports from the top 10 suppliers of precious jewelry under the GSP for 1982-86 is presented in table 6-5.

The share of GSP imports to total imports of precious jewelry increased slightly from 17 percent in 1982 to 19 percent in 1984 before falling back to 17 percent in 1985. In 1986, the share of GSP imports to total imports of precious jewelry returned to 19 percent. The growth in the ratio of GSP imports to total imports of precious jewelry resulted largely from increases by Peru, Yugoslavia, the Dominican Republic, and Korea. Most of the products imported from these countries are reportedly made of precious metals. Decreases in the ratio were incurred by Israel, Mexico, Singapore, and Lebanon. Imports from these countries, other than Lebanon and Singapore, reportedly declined under the GSP because of importers shifting their entries from the GSP program to other preferential programs.

Based on official statistics of the U.S. Department of Commerce, the share of precious-metal jewelry imported under the GSP decreased significantly from 93 percent in 1982 to 80 percent in 1986 (fig. 6-22). The largest decline occurred during the 1983-85 period as the ratio fell 11 percentage points. The decrease in relative importance of precious-metal jewelry was primarily the result of a shift in the composition of articles imported. According to questionnaire respondents, in 1982, 91 percent of total GSP imports were accounted for by neckwear products, primarily gold chains, of which production can be easily expanded or moved (figs. 6-23 and 6-24). As the U.S. market demand for this product grew during 1982-84, developing countries with low-cost labor began producing such products and finishing them

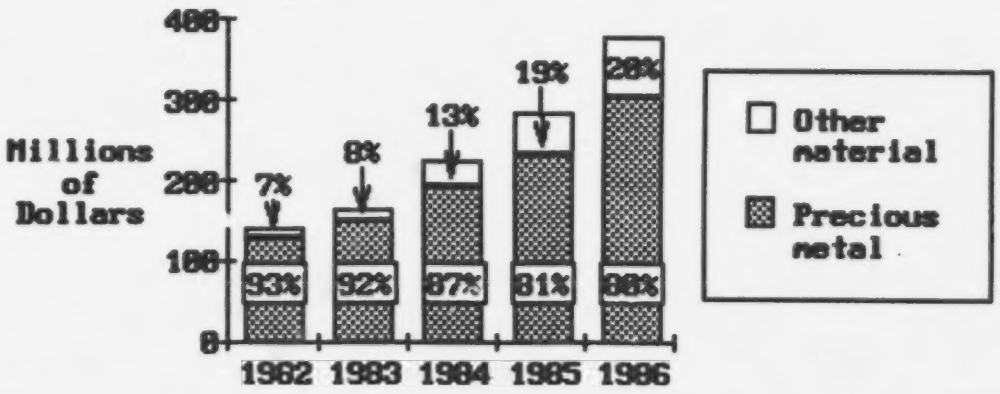
Table 6-5
Precious jewelry: U.S. imports under the GSP and total, by top 10 GSP suppliers in 1986, and ratio of GSP to total imports, 1982 and 1986

Source	1982			1986		
	GSP imports	Total imports	Ratio of U.S. imports under the GSP to total	GSP imports	Total imports	Ratio of U.S. imports under the GSP to total
	1,000 dollars		Percent	1,000 dollars		Percent
Thailand.....	6,557	6,956	94	107,086	111,631	96
Israel.....	89,468	91,790	98	95,514	134,407	71
Peru.....	16,196	18,375	88	47,082	47,308	100
Mexico.....	3,105	3,366	92	33,244	37,301	89
Yugoslavia....	2,214	2,689	82	18,083	18,114	100
Dominican Republic....	73	3,010	2	13,331	63,336	21
Singapore.....	1,693	1,775	95	10,645	11,369	94
Lebanon.....	10,270	10,275	100	10,605	10,932	97
Korea.....	1,492	1,717	87	6,598	6,880	96
All other.....	10,011	716,754	1	39,024	1,544,503	3
Total.....	141,078	856,707	17	381,212	1,985,781	19

Note.--Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure 6-22
Precious jewelry: U.S. imports under the GSP, by material, 1982-86



Source: Official statistics of the U.S. Department of Commerce.

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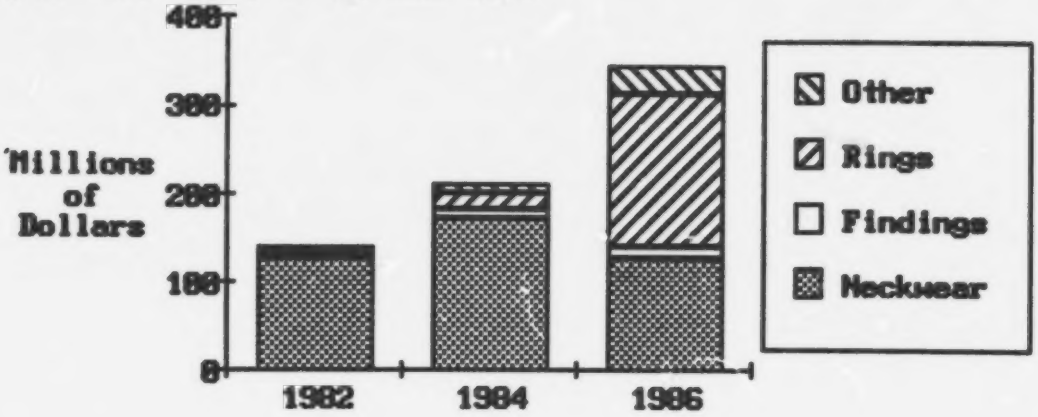
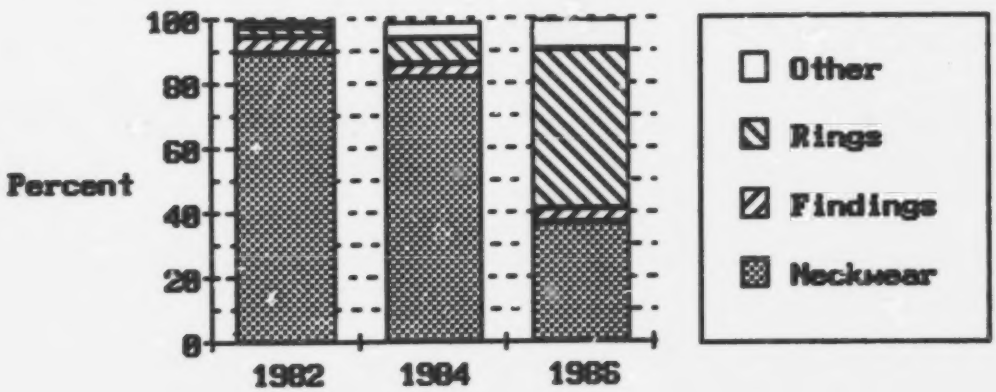
Figure 6-23
Precious jewelry: U.S. imports under the GSP, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

Figure 6-24
Precious jewelry: Share of U.S. imports under the GSP, by product, 1982, 1984, and 1986



Source: Commission questionnaire responses for import data and official statistics of the U.S. Department of Commerce.

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by hand. This is especially noticeable with Peru, which expanded exports to the United States by 87 percent during this period, mostly under the GSP. When eligibility was revoked, such imports declined dramatically. In 1986, the share of total products accounted for by neckwear was 34 percent. Rings, earrings, and to a lesser extent, other jewelry articles accounted for most of the increase in GSP imports. Their shares of total imports increased from 3 percent to 45 percent, 5 percent to 13 percent, and 2 percent to 8 percent, respectively, over the period.

Imports under other preferential tariff programs

U.S. imports of precious jewelry under TSUS item 807.00 1/ almost tripled from $17 million in 1982 to $50 million in 1986 (table 6-6). The share of such imports accounted for by the Dominican Republic increased from 17 percent

Table 6-6
Precious jewelry: U.S. imports for consumption under TSUS item 807.00, 1982-86

Source	1982	1983	1984	1985	1986	Share of U.S. total 1982	Share of U.S. total 1986	Change, 1986 from 1982
	1,000 dollars					Percent		
Dominican Republic	2,873	4,836	12,981	19,004	34,154	16.8	68.6	1,088.8
Haiti	1,258	2,521	2,761	5,920	11,415	7.4	22.9	807.4
Mexico	0	0	1,315	5,469	2,948	0	5.9	-
Mauritius	0	0	4	114	447	0	.9	-
West Germany	0	2	8	110	260	0	.5	-
Italy	11,959	3,171	2,017	0	237	70.1	.5	-98.0
Hong Kong	4	7	3	520	203	1/	.4	4,975.0
Malaysia	0	0	0	0	118	0	.2	-
Morocco	0	0	0	0	41	0	.1	-
All other	975	396	847	589	0	5.7	0	-100.0
Total	17,068	10,932	19,937	31,725	49,822	100.0	100.0	191.9

1/ Less than 0.05 percent.

Note.--Because of rounding, figures may not add to the totals shown.

Source: Compiled from official statistics of the U.S. Department of Commerce.

1/ Products imported under TSUS item 807.00 includes those which are assembled in foreign countries with fabricated components that have been manufactured in the United States and are subject to duty upon the full value of the imported product less the value of the U.S.-fabricated components therein. No further processing in the United States is required for articles imported under item 807.00.

in 1982 to 69 percent in 1986. The bulk of this product is reportedly handmade rope chain where U.S. companies ship wire or chain links to the Dominican Republic for hand assembly into chain products. This chain is then re-exported to the United States under TSUS item 807.00. Other countries, such as Haiti and Mexico, have also used this provision to increase their exports of precious jewelry to the United States. Both of these countries' shares as a percent of total trade under this item increased over the period to 23 percent and 6 percent, respectively. The largest decline in imports of precious jewelry under this item was registered by Italy whose share fell from 70 percent in 1982 to less than 1 percent in 1986. This trade was primarily in chain products and the decline may be partially explained by the drop in the price of gold, making it relatively less expensive to import finished goods as opposed to exporting component parts for assembly.

Imports of precious jewelry also enter the United States under preferential duty rates accorded under the Caribbean Basin Economic Recovery Act (CBERA) 1/, which began in 1984. Such imports increased more than fourfold since the program's inception, from $2.9 million in 1984 to $15.8 million in 1986. No other Caribbean basin country appears to use this provision as extensively as the Dominican Republic, whose imports account for virtually 100 percent of total U.S. imports of precious jewelry under the program.

The United States-Israel Free Trade Area Implementation Act of 1985 established preferential tariff treatment for certain products from Israel. Precious jewelry products classifiable under TSUS items 740.14, 740.15, 740.55, 745.66, and part of 745.67 were accorded duty-free eligibility immediately upon implementation on September 1, 1985. Such imports increased from $10.4 million in 1985 to $34.5 million in 1986, most of which entered under item 740.14. With respect to the remaining items under review, no change in dutiable status will be made until Jan. 1, 1990, when rates shall be determined through Jan. 1, 1995. These products, however, remain eligible for duty-free entry under the GSP.

1/ The CBERA affords nonreciprocal tariff preferences to developing countries in the Caribbean Basin area, enumerated in general headnote 3(a) of the TSUS, to aid their economic development and to diversify and expand their production and exports. The CBERA, enacted in title II of Public Law 98-67 and implemented by Presidential Proclamation No. 5133 of Nov. 30, 1983, applies to merchandise entered, or withdrawn from, warehouse for consumption, on or after Jan. 1, 1984; it is scheduled to remain in effect until Sept. 30, 1995. It provides duty-free entry to eligible articles imported directly from designated basin countries.

Chapter 7. Leading Competitive Factors 1/

A representative sample of U.S. producers, importers, and purchasers of precious jewelry were asked to assess the competitive position of U.S.-made precious jewelry versus foreign-made products with regard to eight factors. Respondents were asked to indicate whether the domestic or foreign product held an advantage for a factor, or if they were equal. Results of this survey, by product, are provided in appendix K.

All three groups combined gave domestically produced products the overall competitive advantage and advantages in factors such as the ability to supply products at various price points and product quality. Domestic products were also heavily favored by at least a 3-to-1 margin in marketing factors such as overall availability 2/, shorter delivery time, and historical supplier relationship. Nevertheless, respondents favored foreign-made precious jewelry by more than a 5-to-3 margin in having lower priced products and gave neither the advantage in product design. The following tabulation shows the percent of responses given to domestically produced and imported products for each factor. The numbers represent the percent of total responses indicating a preference:

Country with advantage 1/	Overall advantage	Lower price	Various price points	Product quality	Product design	Overall availability	Shorter delivery time	Supplier relationship
Domestic (D).....	48	26	48	46	41	67	80	64
Foreign (F).....	37	46	29	36	42	19	10	14
Equal (S).....	15	28	23	19	17	14	10	21
Ratio (F)/(D).....	.8	1.8	.6	.8	1.0	.3	.1	.2
Ratio (D)/(F).....	1.3	.6	1.7	1.3	1.0	3.5	8.0	4.6

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

With respect to finished jewelry made of precious metal, domestically produced products were also believed to hold the overall advantage. Forty-six percent of respondents indicated that domestic suppliers held the overall competitive advantage, and 39 percent indicated that foreign producers held the advantage. On the basis of individual factors, both foreign and domestic products were given the same advantages as in all precious jewelry, except in product design, where foreign products were believed to hold the advantage. On the basis of other marketing factors, the advantage held by domestic producers was slightly less in precious-metal jewelry than in all precious jewelry products. In terms of having a lower priced product, foreign-made

1/ Most of the information used in this section of the report was obtained during field interviews with representatives of the U.S. and Italian industries and from responses to questionnaires of the U.S. International Trade Commission.

2/ Overall availability of products refers to an ability to supply what the buyers want, where they want it, and when they want it.

products received a 44-percent share, whereas 47 percent of the respondents favored domestic producers in the ability to compete at various prices. In each of the marketing factors, domestic products received a 60-percent, or greater, share. The lower relative advantage of domestically produced precious-metal jewelry products indicates that the U.S. industry is believed to be less competitive in this sector of the market than in the market as a whole. The following tabulation summarizes responses to Commission questionnaires comparing U.S.-made precious-metal products with those imported in the U.S. market, by each factor; the numbers represent the percent of total responses indicating a preference:

Country with advantage 1/	Overall advantage	Lower price	Various price points	Product quality	Product design	Overall availability	Shorter delivery time	Supplier relationship
Domestic (D).....	46	26	47	42	37	65	78	60
Foreign (F).....	39	44	30	39	45	20	10	16
Equal (S).....	15	30	23	19	18	15	12	24
Ratio (F)/(D).....	.8	1.7	.6	.9	1.2	.3	.1	.3
Ratio (D)/(F).....	1.2	.6	1.6	1.1	.8	3.3	7.8	3.8

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

For gemstone jewelry, domestically produced products were believed to hold an even greater overall competitive advantage than in all precious jewelry, receiving a 50-percent share of total responses. In terms of each individual factor except product design, the distribution between domestic and foreign products was the same as for all precious jewelry; however, for each factor, domestic products received a higher respective share. With respect to product design, domestic products were favored by a 3-to-2 margin in contrast to the slight advantage given to foreign products for all precious jewelry. The largest disparity in responses was for nonmarketing factors. Foreign-made products were believed to hold an advantage in having lower priced products, in which category they were favored in 52 percent of all responses compared with 27 percent received by domestic products. The distribution of these responses indicates that domestic-made gemstone jewelry is generally believed to be relatively more competitive in this segment of the market than they are in the market as a whole as shown in the following tabulation (in percent):

Country with advantage 1/	Overall advantage	Lower price	Various price points	Product quality	Product design	Overall availability	Shorter delivery time	Supplier relationship
Domestic (D).....	50	27	50	57	52	71	87	76
Foreign (F).....	34	52	28	26	34	17	7	10
Equal (S).....	16	22	22	17	14	12	6	14
Ratio (F)/(D).....	.7	1.9	.6	.5	.7	.2	.1	.1
Ratio (D)/(F).....	1.5	.5	1.8	2.2	1.5	4.2	12.4	7.6

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

7.1. Overall competitive advantage

Precious-metal jewelry.--When respondents were asked to indicate whether domestically produced or imported precious-metal jewelry had an overall competitive advangage, slightly less than one-half of the responses indicated that domestic products had the advantage. Domestic products were considered to have a competitive advantage over all countries except Italy and Hong Kong. Italian products were considered to have an overall competitive advantage by a 5-to-4 margin, and Hong Kong products were favored by a slight margin. The overall competitive advantage in precious-metal jewelry, held by most foreign products, including neckwear, other jewelry articles (primarily because of bracelets), and rings (in some countries), reportedly results from their relatively low production costs compared with those of the United States. Since demand for precious-metal jewelry is highly price elastic, any cost advantage would result in a relatively large change in the quantity sold by these suppliers. This is born out by the rapid gains in U.S. market share by low-cost producers such as Hong Kong.

The following tabulation summarizes responses to Commission questionnaires sent to U.S. producers, importers, and purchasers of precious jewelry. The numbers represent the percent of total responses indicating that a particular foreign source, or the domestic industry, has an overall competitive advantage in precious-metal jewelry:

Country with overall advantage in precious-metal jewelry 1/	All countries	Italy	Hong Kong	Israel	Switzerland	Other
Domestic (D).....	46	39	43	60	74	43
Foreign (F).....	39	49	46	26	3	35
Equal (S).....	15	12	11	13	23	22
Ratio (F)/(D).....	.8	1.3	1.1	.4	2/	.8
Ratio (D)/(F).....	1.2	.8	.9	2.3	24.7	1.2

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.
2/ Less than 0.05.

Gemstone jewelry.--A comparison of the overall competitive position of U.S.-made gemstone jewelry with imports, by countries, follows. It is based on data submitted in response to Commission questionnaires sent to U.S. producers, importers, and purchasers of precious jewelry; numbers represent the percent of total responses indicating a preference:

Country with overall advantage in gemstone jewelry 1/	All countries	Italy	Hong Kong	Israel	Switzerland	Other
Domestic (D).....	50	57	41	63	56	42
Foreign (F).....	34	34	49	16	4	41
Equal (S).....	16	9	10	21	40	17
Ratio (F)/(D).....	.7	.6	1.2	.3	.1	1.0
Ratio (D)/(F).....	1.5	1.7	.8	3.9	14.0	1.0

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

One-half of all responses indicated that domestically produced products held an overall competitive advantage in gemstone jewelry. When domestically produced products were compared with those made in Italy, Israel, and Switzerland, domestic products were considered to have a competitive advantage in over one-half of all responses 1/. However, Hong Kong products were favored by almost one-half of all responses. In the case of all other countries, the domestic products were considered to have an overall competitive advantage in 42 percent of all responses; 17 percent of all responses indicated the products were equal 2/. Hong Kong's advantage in gemstone jewelry products reportedly lies in the fact that labor cost advantages provide them with an ability to set and/or string gemstones at a lower cost relative to that of producers in the United States. In addition, foreign producers in the Orient, where there is an abundant supply of different gem quality stones and natural pearls, can obtain these materials more easily and at a lower cost. Other factors which were reported to give foreign producers an overall advantage included lower production costs and a workforce that can easily be shifted among various products, production processes, and techniques.

1/ It should be noted that comparisons with Switzerland which indicate preferences may be biased by the fact that an insufficient sample may have been drawn to provide accurate coverage of precious-metal watch bands, which are the principal products imported from Switzerland. Although our sample included coverage of such watchbands, it was insufficient to provide conclusive statements comparing all Swiss jewelry products to U.S. jewelry products. This bias may exist throughout this chapter.

2/ Most questionnaire respondents indicated that Thailand was their principal supplier of gemstone jewelry among other countries. However, direct conclusions regarding the competitiveness of precious jewelry from Thailand can only be inferred from responses for all other countries because respondents were not asked to directly compare U.S.-made products with those from Thailand.

7.2. Prices

The price of precious jewelry from U.S. and foreign suppliers depends on the amount of local value added relative to the amount of value added that comes from internationally traded inputs. The greater the value added from internationally traded inputs, the more closely prices of precious jewelry move with prices of these inputs. Gold constitutes by far the greatest value of most precious jewelry, with the exception of jewelry containing precious gems. Thus, the price of precious metal jewelry tends to move closely with the price of gold. Other factors that affect the price of precious jewelry include differences in design appeal, craftsmanship, and quality of input materials, including the total weight and fineness of precious metals and the internal quality of any component gemstone.

In addition to affecting the price level of finished precious jewelry, internationally traded inputs (gold) also affect the level of output of precious-metal jewelry. A change in the price of gold causes an inverse change in the supply of precious jewelry, as shown in table 7-1.

Table 7-1
Precious jewelry: Exports from Italy, U.S. producers' shipments of precious jewelry and precious-metal jewelry, and the nominal price of gold in lire and U.S. dollars, 1981-86

(1982=100.0)

Year	Italian exports	Nominal price of gold in lire	U.S. producers' shipments of precious jewelry	U.S. producers' shipments of precious-metal jewelry	Nominal price of gold in dollars
1981.....	71.4	102.8	1/	1/	122.3
1982.....	100.0	100.0	100.0	100.0	100.0
1983.....	92.3	126.7	108.0	108.5	112.8
1984.....	125.2	124.7	118.1	125.3	96.0
1985.....	140.1	119.3	119.0	119.2	84.5
1986.....	1/	108.0	118.8	122.0	98.0
Percentage change:					
1982.....	40.1	-2.7	1/	1/	-18.2
1983.....	-7.7	26.7	8.0	8.5	12.8
1984.....	35.6	-1.6	9.4	15.5	-14.9
1985.....	11.9	-4.3	0.8	-4.9	-12.0
1986.....	1/	-9.5	-0.2	2.3	16.0

1/ Not available.

When the price of gold increases, exports from Italy decline. Similarly, U.S. producer shipments of precious-metal jewelry also decline, but to a lesser degree, reflecting the lower gold content of U.S. precious jewelry compared with that of Italy.

Figure 7-1 shows U.S. producer price indexes for platinum and karat gold jewelry and other precious jewelry, and for comparative purposes, those for all commodities, except farm products, and miscellaneous products. Figure 7-2 shows two import price indexes for jewelry, one from the Bureau of Labor

Figure 7-1
U.S. producer price indexes: All commodities (except farm products); miscellaneous products; platinum and karat gold jewelry; and other precious jewelry; quarterly 1982-86 (April-June 1983=100)

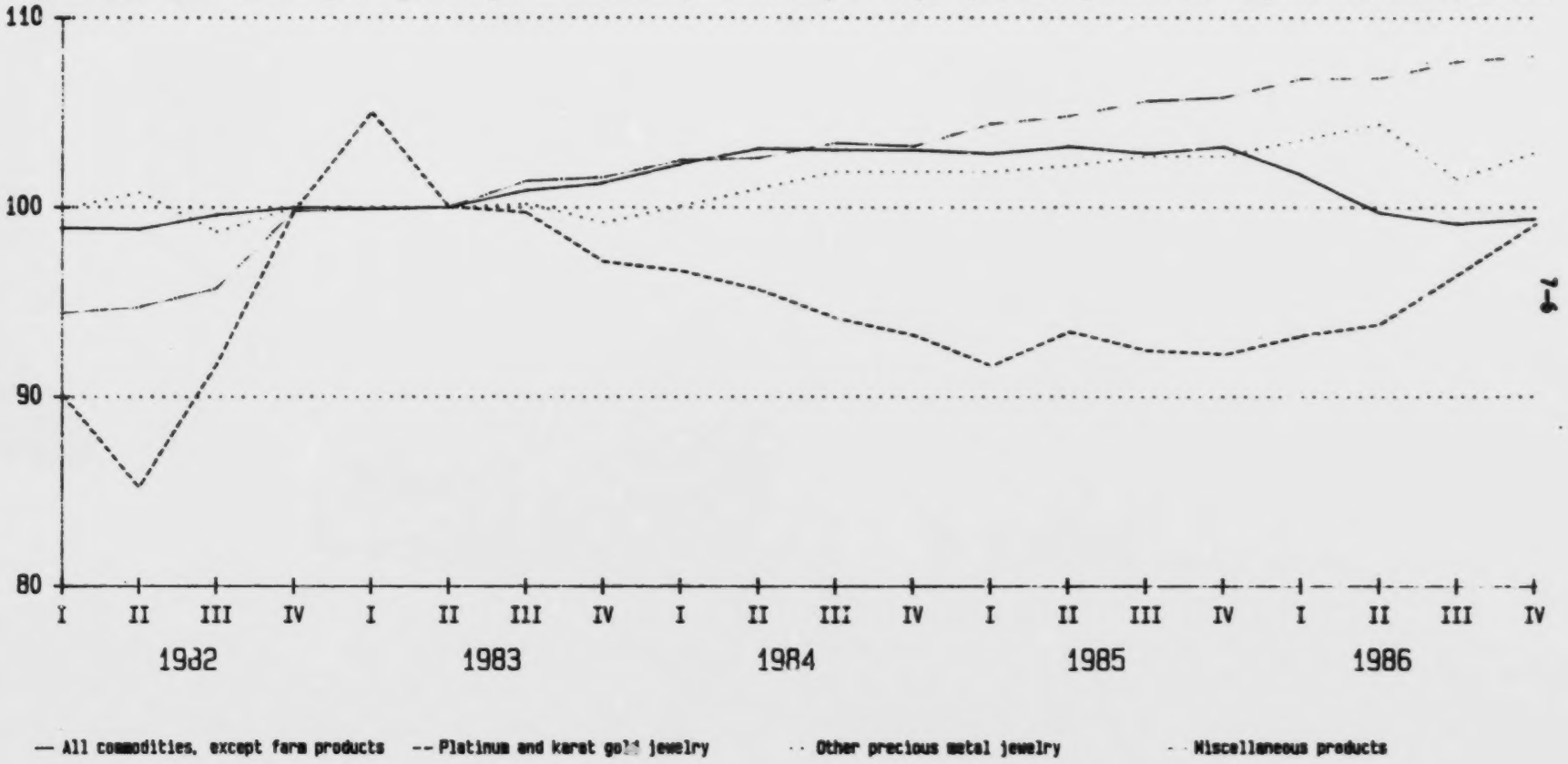

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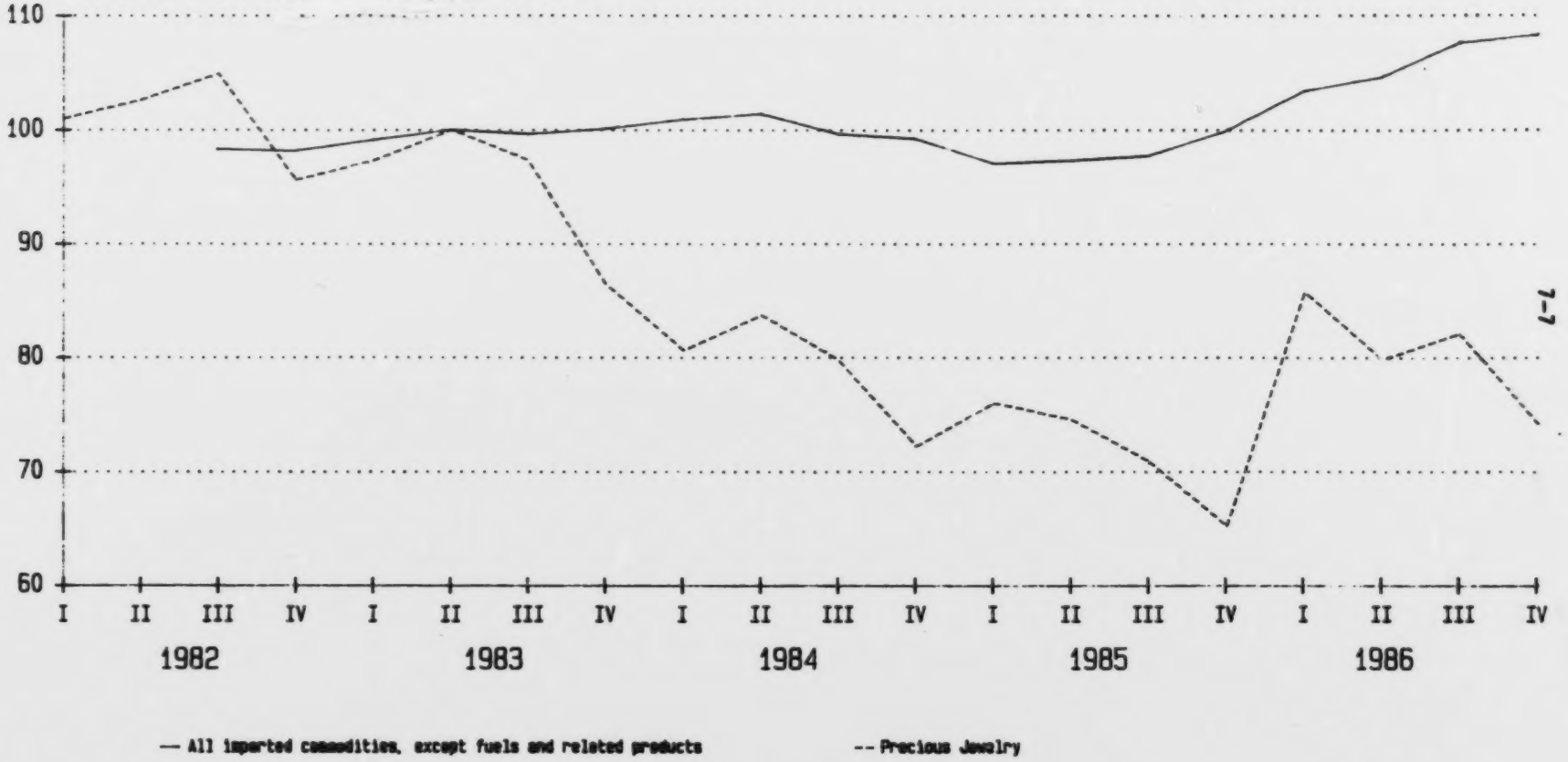
Figure 7-2
Import Price Indexes: All commodities (except fuel and related products), and precious jewelry, quarterly 1982-86 (April-June 1983=100)



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Statistics (BLS), and the other computed from responses to Commission questionnaires, and an import price index for all commodities, except fuel and related products. Figure 7-3 shows price indexes for all precious metals, for gold, and for silver. Because the BLS import price index is not available prior to the second quarter of 1983, all price indexes are reported using this quarter as a base period to facilitate comparisons.

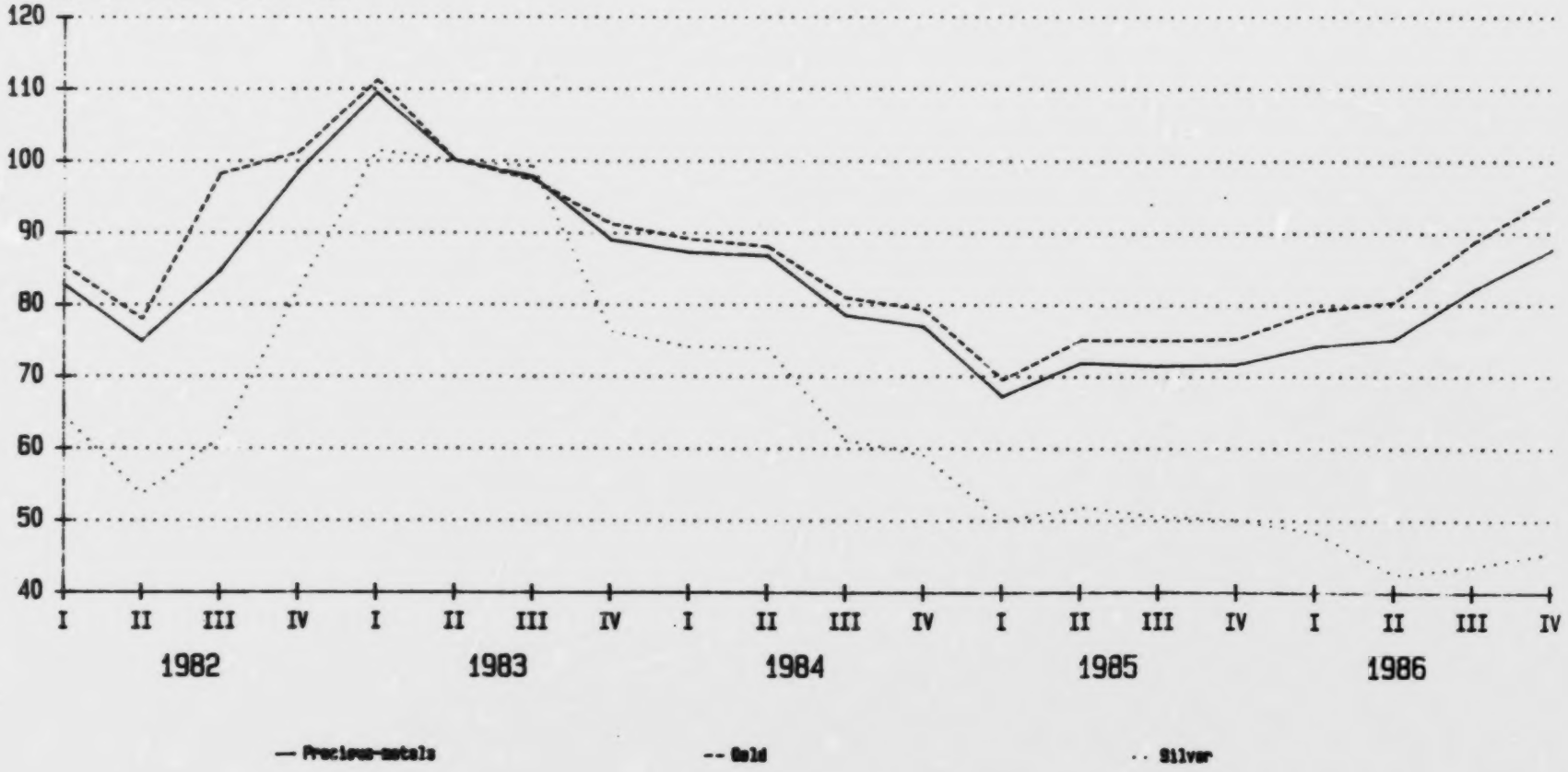
The U.S. Producer Price Index of platinum and karat gold jewelry increased steadily from April-June 1982 through January-March 1983, then declined steadily until January-March 1985. The price index was relatively stable from April-June 1985 through April-June 1986, then increased during the second half of 1986. This price trend closely followed the price trends for precious metals, gold, and silver. The price index for other precious jewelry showed very little variation, increasing slightly during the 5-year period. In comparison, the U.S. Producer Price Index for all commodities, except farm products, increased from January-March 1982 through April-June 1985 and then fluctuated on a downward trend through the end of the period, whereas that for all miscellaneous products increased steadily throughout the period.

The import price index for jewelry made of precious and semiprecious materials declined steadily from April-June 1983 through October-September 1984, following the price trends of the U.S. Producer Price Index for platinum and karat gold jewelry and the indexes for the precious metals. During April-June 1985, the price index rose to the same nominal level as during April-June 1983, then increased steadily through July-September 1986. The price index of imported gold jewelry calculated from questionnaire data showed no apparent pattern from January-March 1982 through April-June 1983. From April-June 1983 through October-December 1985, prices declined fairly steadily, following the same pattern as the U.S. Producer Price Index but at a more rapid rate. In comparison, the trend of import prices for all commodities, except fuel and related products, showed no apparent trend through July-September 1983; however, it then increased steadily through April-June 1984, declined steadily through June-March 1985, and then increased steadily through the end of the period.

Differences in the relative rate of decline in the price of domestically produced and imported precious jewelry may be explained by a couple of factors. Although jewelry producers face the same price for internationally traded inputs such as gold, they have different costs for local inputs such as labor. The rapid decline in the price of gold increased the relative importance of these other inputs, favoring foreign suppliers with lower costs of local inputs. Furthermore, the appreciation of the U.S. dollar during most of the study period reduced the relative cost of the foreign local value added vis-a-vis that of the United States. As a result, foreign producers were able to lower prices more rapidly in the U.S. market compared with U.S. producers and thus gain a larger share of the market.

The international transfer of technology has allowed nations with low-cost labor to gain an even greater competitive advantage by reducing costs of production through combining current technologies with low-cost labor. In fact, low foreign wage rates by themselves apparently tend to outweigh any technological advantage that might be held in the United States. This is supported by the fact that questionnaire respondents, by a 3-to-1 margin, indicated that Hong Kong products had a relative price advantage over U.S. products. Questionnaire respondents also indicated, by a 2.1-to-1 margin, that products from other countries, primarily other low-cost-labor Asian countries such as Thailand, had a relative price advantage over U.S. products.

Figure 7-3
Price Indexes: Precious-metals, refined gold and refined silver, quarterly 1982-86
(April-June 1983=100)



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It is believed that the U.S. industry is a follower of technological developments in Europe, primarily Italy. Therefore, Italian products may have been judged superior in price because of a technological advantage rather than a low-labor cost advantage. However, it is noteworthy that questionnaire respondents, by a 1.6 to 1 margin, cited Italian precious jewelry as having a price advantage over U.S. products, and their wage rates in miscellaneous manufacturing industries were up to 20 percent cheaper than comparable U.S. rates. Labor costs, other than wage rates, which affect the competitiveness of U.S. producers include Federal and State unemployment contributions, Social Security payments, employer-provided health insurance, workmen's compensation, and withholding taxes. Producers of precious jewelry in most of the major competitor countries are also affected by similar costs, however, there is insufficient information to make direct comparisons.

Table 7-2 shows an index of estimated monthly compensation of workers in miscellaneous manufacturing industries for selected major precious jewelry producing nations. Compensation of employees in the U.S. precious jewelry industry is estimated to be approximately the same as that for U.S. miscellaneous manufacturing industries. The relative labor costs in miscellaneous manufacturing industries in Hong Kong are less than one-half of those in the United States, although those in Japan and Switzerland are higher. Those in Italy, France, and the United Kingdom appear to be increasingly less than those in the United States. Although labor costs in the United States rose 29 percent from 1980-84, those in similar industries in major European precious jewelry competing nations dropped an average of 19 percent each, and those in Asia rose an average of 54 percent, primarily because of wage increases in Hong Kong. Additional overhead costs of jewelry producers not counted in the U.S. index include those associated with compliance of Federal and local government regulations for pollution control and worker safety.

Imports from Italy, Hong Kong, Israel, and Switzerland, the major U.S. suppliers of precious jewelry, are considered to be highly price competitive with domestically produced jewelry. However, any price advantage is also due to other factors, as explained below, which affect the degree of price competitiveness between domestically produced and imported precious jewelry.

An assessment by country of the price competitiveness of U.S.-made precious jewelry with imports in the U.S. market follows. It is based on data submitted in response to Commission questionnaires sent to U.S. producers, importers, and purchasers of precious jewelry. The numbers represent the percent of total responses indicating that a particular foreign source, or the domestic industry, has a pricing advantage:

Country with pricing advantage 1/	All countries	Italy	Hong Kong	Israel	Switzerland	Other
Domestic (D).....	25	25	20	30	48	21
Foreign (F).....	44	41	59	43	18	44
Equal (S).....	31	34	21	27	35	35
Ratio (F)/(D).....	1.7	1.6	3.0	1.4	.4	2.1
Ratio (D)/(F).....	.6	.6	.3	.7	2.7	.5

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

Table 7-2
Index of estimated monthly compensation of workers in miscellaneous manufacturing industries 1/ for selected countries, 1980-84

(United States 1980=100.0)

Year	United States	Japan 2/	Hong Kong	United Kingdom 3/
1980...	100.0	113.2	23.0	85.2
1981...	109.3	123.1	24.5	78.2
1982...	117.5	111.6 8/	48.7 9/	73.2
1983...	124.7	122.0	43.7 9/	70.0
1984...	128.8	127.9	44.7 9/	68.0

	Switzerland 4/	France 5/	West Germany 6/	Italy 7/
1980...	138.6	91.6	114.3	87.8
1981...	125.0	83.1	97.1	81.4
1982...	128.5	75.5	94.6	80.0
1983...	129.3	75.2	91.0	10/
1984...	118.7	69.1	83.1	10/

1/ Foreign currency data were translated using relevant period average exchange rates as reported in International Financial Statistics, IMF. See table D-1 in app. D for compensation in U.S. dollars.
2/ Includes family allowances and mid- and end-of-year bonuses.
3/ Determined in October of each year; Includes full time workers on adult rates of pay.
4/ Determined in October of each year; includes family allowances paid directly by the employers.
5/ Determined in October of each year.
6/ Includes family allowances paid directly by the employers.
7/ Includes payments in kind.
8/ Sample design revised.
9/ Series replacing former series; prior to 1982, determined in March and September of each year.
10/ Not available.

Source: Yearbook of Labor Statistics, International Standard Industrial Classification 390, International Labor Office, Geneva 1985.

As the above tabulation illustrates, 44 percent of Commission questionnaire responses indicated that foreign products had a lower purchase price, almost a 2-to-1 margin. On a country basis, almost 60 percent of the respondents stated that Hong Kong products were lower priced. The share was slightly less for Italy, Israel, and all other countries, except Switzerland. In fact, questionnaire respondents indicated, by a 3-to-1 margin, that domestic products had a price advantage vis-a-vis Swiss products.

The tabulation below shows the breakdown of price advantage by various cost components indicated by respondents. The numbers represent the percent of total responses indicating a preference:

Pricing factor	Producers 1/			Importers 1/			Purchasers 1/		
	D	F	S	D	F	S	D	F	S
Lower price.....	8	65	27	21	63	16	66	27	7
Due to:									
Lower cost labor....	7	81	12	20	63	17	2/	2/	2/
Lower cost materials.....	10	29	61	21	20	59	2/	2/	2/
Exchange-rate advantage.....	17	60	23	29	32	39	2/	2/	2/
Other factors.....	8	70	22	58	30	12	2/	2/	2/

1/ Respondents were asked to compare the competitive positions of U.S.-produced and imported precious jewelry in the U.S. market during 1982-86. They were to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

2/ Causes of lower prices were not asked.

Eighty percent of responses by U.S. producers and 63 percent by U.S. importers indicated that lower cost labor contributed to lower priced foreign products. Most importers and producers, an average of 60 percent each, indicated that neither the foreign-made nor the domestically produced product used lower cost materials. A majority of U.S. producers indicated that foreign-made products also held a pricing advantage because of favorable exchange rates, but importers felt this advantage was much less pronounced, and, in fact, almost 40 percent indicated that there was no advantage. With regard to other factors affecting price, including other production costs, transportation, insurance, and local taxes, producers overwhelmingly indicated that foreign-made products held an advantage, whereas importers indicated that domestic products held an advantage, but to a lesser degree.

The discrepancies in the answers between producers, importers, and, in the case of overall price advantage, purchasers are instructive. To the extent that some producers import precious jewelry and most importers were not formerly producers, the producers should be better able to gauge price differences than importers, particularly since in a labor-intensive industry such as precious jewelry, the producers always have the option of switching to imports, whereas importers are less likely to start producing in the United States.

In rating labor costs, both producers and importers gave an advantage to foreign labor, by a 12-to-1 margin for producers and a 3-to-1 margin for importers. Most likely the producers were comparing U.S. wages with those of the most prominent low-wage sources, such as Hong Kong, and importers were comparing them with their own major source countries, which in some cases included high-wage-rate countries, such as Japan and Switzerland.

Finally, although both producers and importers indicated that foreign products enjoyed an exchange-rate advantage over domestic products, importers, who would be more continually aware of exchange-rate fluctuations and more immediately affected by changes in the dollar's strength, reported a smaller margin of advantage. The largest share of responses indicated that there was

no [illegible]ntage derived from exchange-rate fluctuations. With regards to other factors, producers probably based their preferences on factors, including additional costs associated with taxes, Federal, State, and local regulatory compliance, and employee benefits, whereas importers' decisions were most likely based on such factors as transportation, insurance, and levied duty.

The following tabulation presents a relative price comparison of U.S.-made precious-metal jewelry with imports into the U.S. market, by countries. It is based on data submitted in response to Commission questionnaires sent to U.S. producers, importers, and purchasers of precious jewelry; numbers represent the percent of total responses indicating a preference:

Country with pricing advantage 1/	All countries	Italy	Hong Kong	Israel	Switzerland	Other
Domestic (D).....	25	23	21	27	56	21
Foreign (F).....	42	40	54	41	12	42
Equal (S).....	33	37	25	31	32	37
Ratio (F)/(D).....	1.7	1.7	2.6	1.5	.2	2.0
Ratio (D)/(F).....	.6	.6	.4	.7	4.7	.5

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

The following tabulation presents a relative price comparison of U.S.-made gemstone jewelry with imports into the U.S. market, by countries. It is based on data submitted in response to Commission questionnaires sent to U.S. producers, importers, and purchasers of precious jewelry; numbers represent the percent of total responses indicating a preference:

Country with pricing advantage 1/	All countries	Italy	Hong Kong	Israel	Switzerland	Other
Domestic (D).....	26	35	18	39	31	20
Foreign (F).....	52	43	67	50	29	49
Equal (S).....	22	22	15	11	40	31
Ratio (F)/(D).....	2.0	1.2	3.7	1.3	0.9	2.5
Ratio (D)/(F).....	.5	.8	.3	.8	1.1	.4

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

Hong Kong had the largest price advantage in precious-metal products, followed by Italy and Israel. With respect to Switzerland, the price advantage was given to domestic products by a 5-to-1 margin. The price advantage attributed to foreign competitors in gemstone jewelry was slightly greater than in precious-metal jewelry, by 2-to-1 compared with less than

2-to-1. The greatest advantage was indicated relative to Hong Kong. Italy and Israel were accorded a slight advantage, and domestic products were rated as having an advantage compared with Switzerland.

In contrast to foreign producers perceived ability to supply lower priced products, respondents indicated that domestic producers held a competitive advantage in the ability to supply products at various prices. This is an important factor in the U.S. market because retail jewelry departments want to carry products in various price ranges. The ability of a supplier to produce products at various prices means that he has the potential for greater repeat business. The following tabulation for all precious jewelry summarizes responses to the query on ability to supply products at various price points. Numbers represent the percent of total responses indicating a preference:

Country with ability to supply products at various prices 1/	All countries	Italy	Hong Kong	Israel	Switzerland	Other
Domestic (D).....	46	45	41	65	64	35
Foreign (F).....	29	32	39	16	8	30
Equal (S).....	25	23	21	18	28	36
Ratio (F)/(D).....	.6	.7	.9	.2	.1	.9
Ratio (D)/(F).....	1.6	1.4	1.1	4.1	8.0	1.2

1/ Respondents were asked to mark "D" if the perceived domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

As the tabulation indicates, the domestic margin represented less than a 2-to-1 overall advantage in the perceived ability to supply products at various prices. Israel and Switzerland, in over one-half of the respective responses, were lacking in such an ability by more than a 4-to-1 margin. Regarding other suppliers, domestic producers were slightly favored.

7.3. Product quality

Precious jewelry quality can be measured in different ways. The most important factors are the quality of the component materials, craftsmanship, and "aesthetic value" or attractiveness of design. As previously stated, most major materials used in precious jewelry are, by definition, higher valued than those used in costume jewelry. Craftsmanship deals with the quality of production and can be affected by the production process, setting of stones, polishing, application of coating materials, and other finishing work. As a result of the rapid international transfer and standardization of jewelry production technology, both domestic and foreign producers are able to use the same types of manufacturing equipment and processes. Industry sources indicate that most imported precious jewelry was generally inferior in quality to U.S. products, except for Italian. However, the quality of imported precious jewelry from other countries has been improving and continues to improve as operations become more efficient and reliable. Currently, members of the U.S. industry acknowledge that the quality of imports varies greatly by country, plant, and even production run.

Domestic precious jewelry was generally rated as having a quality advantage over imports, particularly in gemstone jewelry. Responses comparing U.S. precious-metal products with those of Italy heavily favored Italian products. This advantage is primarily in neckwear, in which Italy is by far the world's leader in chainmaking production technology. The following tabulation on precious-metal jewelry summarizes responses to Commission questionnaires on relative differences in product quality. The numbers represent the percent of total responses indicating a preference:

Country with quality advantage 1/	All countries	Italy	Hong Kong	Israel	Switzerland	Other
Domestic (D).....	42	23	58	73	47	40
Foreign (F).....	39	58	21	13	29	39
Equal (S).....	19	19	21	15	25	21
Ratio (F)/(D).....	.9	2.5	.4	.2	.6	1.0
Ratio (D)/(F).....	1.1	.4	2.8	5.6	1.6	1.0

1/ Questionnaire respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

The following tabulation on gemstone jewelry summarizes responses to Commission questionnaires on relative differences in product quality. The numbers represent the percent of total responses indicating a preference:

Country with quality advantage 1/	All countries	Italy	Hong Kong	Israel	Switzerland	Other
Domestic (D).....	69	44	52	74	58	48
Foreign (F).....	16	38	20	13	3	34
Equal (S).....	15	18	28	13	39	18
Ratio (F)/(D).....	.2	.9	.4	.2	.1	.7
Ratio (D)/(F).....	4.3	1.2	2.6	5.7	19.3	1.4

1/ Questionnaire respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

Note that for precious-metal jewelry, the margin of quality advantage attributed to U.S. producers is less than the margin of price advantage attributed to competitors overall and that this margin advantage holds against each competitor except Italy and other countries. By contrast, in gemstone jewelry overall and for all countries but Hong Kong and other, the ratio of foreign price advantage was less than the ratio of U.S. quality advantage.

7.4. Product design

Design plays an important role in the purchase of jewelry and is relatively more important to precious jewelry than to costume. In some situations, within a given price range, design is the most important determinant of a purchase. The design of precious jewelry is normally developed in one of two ways. It can be a copy of a successful design used in costume jewelry or it can be original. In the former, a proven design is reproduced in a variety of more expensive materials, to sell at various price levels, and marketed to consumers who can purchase the "look" of the jewelry at a relatively high cost. The success of the design in costume jewelry often determines its success in precious jewelry. Since a variety of materials can be used, different price levels can be achieved to make the piece affordable to most consumers. Expensive materials can also be used to make the piece exclusive; however, this is not common because the highest priced pieces are generally original designs. In the latter, a new design can be created for competitive purposes or to occupy a particular niche in the market before mass production begins. Designs of precious jewelry can also be tailored to specific materials or prices much more easily than costume jewelry. Traditionally, European producers, primarily Italian, have been the principal innovators of future trends and styles in precious jewelry products. U.S. designers often travel to European trade shows to view the latest styles in those markets and to develop ideas. At the same time, they shop those markets to see what sells.

The design of precious-metal jewelry is slightly less important than that in gemstone jewelry because it is only one material. However, different methods of production can be used to create varied appearances, such as different colors or textures, which add to the jewelry's appeal. Based on discussions with representatives of the Italian industry, their designs are the result of an artisanal goldsmith tradition spanning many centuries. This tradition has helped them achieve world prominence as designers of precious-metal jewelry. The following tabulation presents an assessment of design as a competitive factor in the U.S. market between U.S.-made precious-metal jewelry and imports. It is based on data submitted in response to Commission questionnaires sent to U.S. producers, importers, and purchasers of precious jewelry; numbers represent the percent of total responses indicating a preference:

Country with design advantage 1/	All countries	Italy	Hong Kong	Israel	Switzerland	Other
Domestic (D).....	37	20	46	66	47	39
Foreign (F).....	45	67	35	12	11	45
Equal (S).....	18	13	19	21	43	16
Ratio (F)/(D).....	1.2	3.4	.8	.2	.2	1.2
Ratio (D)/(F).....	.8	.3	1.3	5.5	4.3	.9

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

Foreign-made products were favored in design by a 45 percent to 37 percent margin of all responses, primarily as a result of the popularity of Italian designs in the U.S. market. Italian products held the greatest advantage over U.S.-produced products by more than a 3-to-1 margin. Domestic designs were decisively favored against those of Israel and Switzerland; however, against Hong Kong the advantage was slightly less. When compared with other countries, foreign products were favored primarily because of the influences of other European design centers and Japan.

Domestic products were favored in gemstone jewelry design versus all countries, except Italy, by more than a 3-to-2 margin. Italian designs were once again favored, but to a lesser degree. The reason for the disparity is believed to be the result of Italy's superiority in making machines for gold products that allows them greater creative possibilities. However, since gemstone jewelry is relatively less capital intensive, access to and creativity with a variety of raw materials, including other metals and various gemstones, is more significant. The following tabulation presents an assessment of design as a competitive factor in the U.S. market between U.S.-made gemstone jewelry and imports. It is based on data submitted in response to Commission questionnaries sent to U.S. producers, importers, and purchasers of precious jewelry; numbers represent the percent of total responses indicating a preference:

Country with design advantage 1/	All countries	Italy	Hong Kong	Israel	Switzer-land	Other countries
Domestic (D).....	52	40	52	74	56	51
Foreign (F).....	34	49	38	13	7	36
Equal (S).....	14	11	10	13	37	13
Ratio (F)/(D).....	.7	1.2	.7	.2	.1	.7
Ratio (D)/(F).....	1.5	.8	1.4	5.7	8.0	1.4

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

7.5. Exchange rates

Changes in exchange rates can affect the ability of foreign suppliers to compete in the U.S. market to the extent that the relative prices of local inputs in the countries are affected. For example, a depreciation of the dollar reduces labor costs in the United States relative to other countries. However, the greater the share of value from internationally traded inputs, the smaller the role of exchange rates in affecting the ability of foreign producers to compete. Because gold is internationally traded, a change in its price will affect all jewelry producers equally and will not significantly affect international competitiveness. Similarly, a change in the value of a country's currency in terms of gold will not significantly affect its capacity to compete in the U.S. market.

Changes in the nominal and inflation-adjusted exchange rates of major suppliers of precious jewelry are shown in table 7-3. In most cases, the foreign currency depreciated in both nominal and real terms against the dollar

Table 7-3
Nominal and real changes in the dollar exchange rates of currencies of the major jewelry suppliers, by 4th quarters, 1982-86

Country	Oct.-Dec., 1983 1/	Oct.-Dec., 1984 1/	Oct.-Dec., 1985 1/	Oct.-Dec., 1986 1/	4-year change, Oct.-Dec., 1986 from 1982
Italy:					
Nominal	-11.7	-14.1	8.0	26.0	3.3
Real	-5.4	-7.6	14.5	2/	2/
Hong Kong:					
Nominal	-16.4	1.1	0.2	0.5	-14.9
Real	3/	3/	3/	3/	3/
Israel:					
Nominal	-64.9	-83.4	-63.6	-0.8	-97.9
Real	-3.8	-5.1	-3.0	19.9	6.2
Switzerland:					
Nominal	-0.8	-14.2	17.9	28.3	28.6
Real	-1.9	-12.4	19.1	26.0	28.9
Thailand:					
Nominal	0	-10.0	-3.4	1.0	-12.2
Real	0.9	-15.7	-1.4	3.3	-13.3
West Germany:					
Nominal	-6.6	-12.2	18.1	28.6	+24.6
Real	-7.0	-10.9	19.9	27.2	+26.3
Japan:					
Nominal	10.9	-4.8	13.8	2/	2/
Real 4/	6.9	-5.5	14.0	2/	2/
United Kingdom:					
Nominal	-10.9	-17.2	18.1	-0.5	-13.3
Real	-7.6	-13.3	24.3	7.1	6.7
France:					
Nominal	-13.3	-12.7	18.6	20.0	7.8
Real	-6.8	-7.5	21.1	2/	2/

1/ Percentage change from same period preceeding year.
2/ Not available.
3/ The U.S.$/Hong Kong$ exchange rate is not deflated because data on prices in the two countries are not comparable.
4/ Deflated by multiplying the ratio of the foreign wholesale price index to the U.S. Wholesale (producer) Price Index.

Sources: Various issues of International Financial Statistics, International Monetary Fund.

in 1983 and 1984 and appreciated in 1985 and 1986. The strengths of these exchange-rate movements vary a great deal among countries.

The exchange rates for Switzerland, the United Kingdom, West Germany, France, and Italy follow this general pattern, except for a slight decrease in the nominal value of the British pound in 1986. The appreciation of the Swiss franc and the West German mark in 1985 and 1986 was much greater than their

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depreciation during the previous two years. As a result, the franc appreciated over the four year period by 28.6 percent in nominal terms and 28.9 percent in real terms. Similarly, the mark appreciated 24.6 percent in nominal terms and 26.3 percent in real terms. Over the 4-year period, the nominal value of the French franc rose by 7.8 percent and the Italian lira by 3.3 percent. In real terms, both the franc and the lira depreciated by less than they did in nominal terms in 1983 and 1984, and appreciated by more in 1985. Data are not yet available for the real change in the exchange rate for France and Italy in 1986. Over the 4-year period, the British pound depreciated in nominal terms against the dollar by 13.3 percent and appreciated in real terms by 6.7 percent.

The Thai baht is tied to a basket of currencies that includes the U.S. dollar. The nominal exchange rate for the Thai baht did not change in 1983. In real terms, the baht appreciated slightly against the dollar in that year. The baht depreciated in both nominal and real terms in 1984 and 1985, and appreciated slightly in 1986. Over the 4-year, period the baht depreciated in nominal terms against the dollar by 12.2 percent and in real terms by 13.3 percent.

The Hong Kong dollar has been pegged to a basket of currencies, including the U.S. dollar, since the fourth quarter of 1983. 1/ The nominal value of the Hong Kong dollar declined by 16.4 percent against the U.S. dollar in 1983, then appreciated by much smaller amounts in each of the next 3 years, producing a depreciation over the 4-year period of 14.9 percent. Real values of the Hong Kong dollar could not be calculated because its price data, used to deflate changes in nominal exchange rates, are not comparable to price data for the United States.

The nominal value of the Israeli shekel depreciated against the dollar by more than 60 percent in 1983, 1984, and 1985. This depreciation reflects the extremely high rate of inflation in Israel in those years. When the exchange-rate index is adjusted for inflation, the real rate of exchange follows the same trend as the European currencies. The shekel depreciated by less than 1 percent in 1986 and by 97.9 percent during the 4-year period. The shekel declined in real terms by relatively small amounts during 1983-85, no more than 5.1 percent in any one year, and appreciated in 1986, producing an overall real appreciation over the 4 years of 6.2 percent. The nominal exchange rates of the eight currencies between the first quarter of 1983 and the fourth quarter of 1986 are depicted in figs. 7-4 and 7-5. Each exchange rate is indexed to a value of 100 for the first quarter of 1983. A complete table of indexed nominal and real exchange rates for the United States vis-a-vis major precious jewelry supplying nations appears in appendix H.

Exchange rates affect both imports and exports of precious jewelry articles. The dual effect is related to the relative prices of imported goods in the U.S. market, as well as of U.S. products in foreign markets. The strengthening of the dollar vis-a-vis currencies of trading partners causes the price of foreign products in the domestic market to decline. Conversely, a stronger dollar causes the price of U.S. goods in foreign markets to increase.

1/ International Monetary Fund, Exchange Arrangements and Exchange Restrictions, Annual Report, 1986.

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Figure 7-4
Exchange rate indexes: Switzerland, Thailand, United Kingdom, and West Germany, nominal versus the U.S. dollar, quarterly, 1983-86

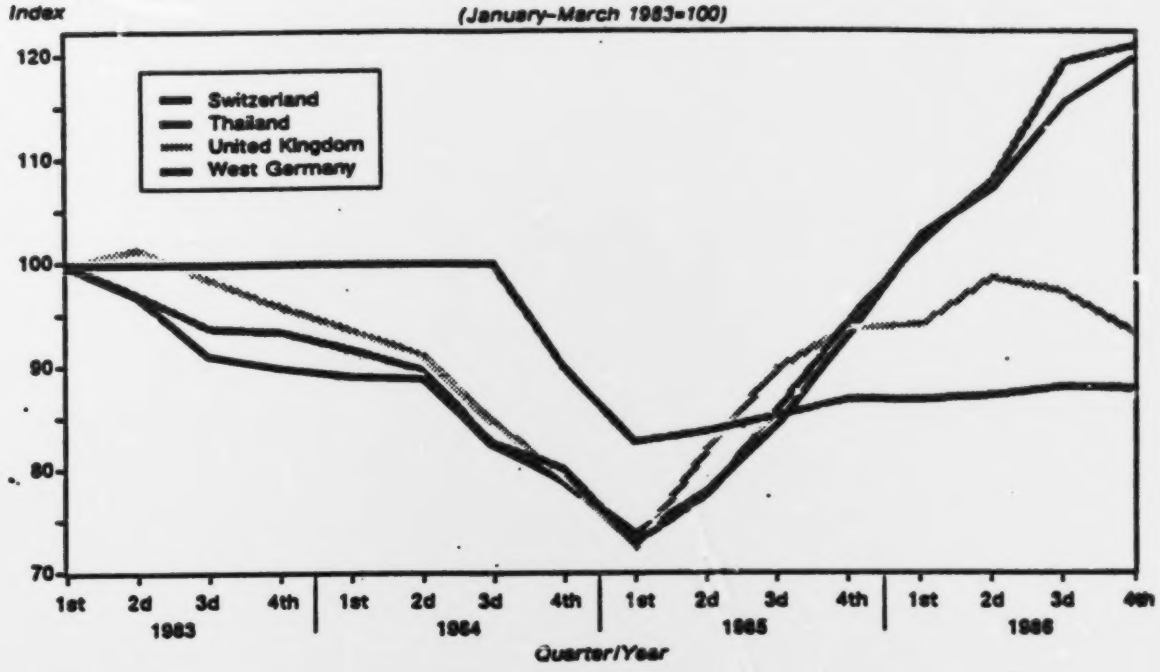
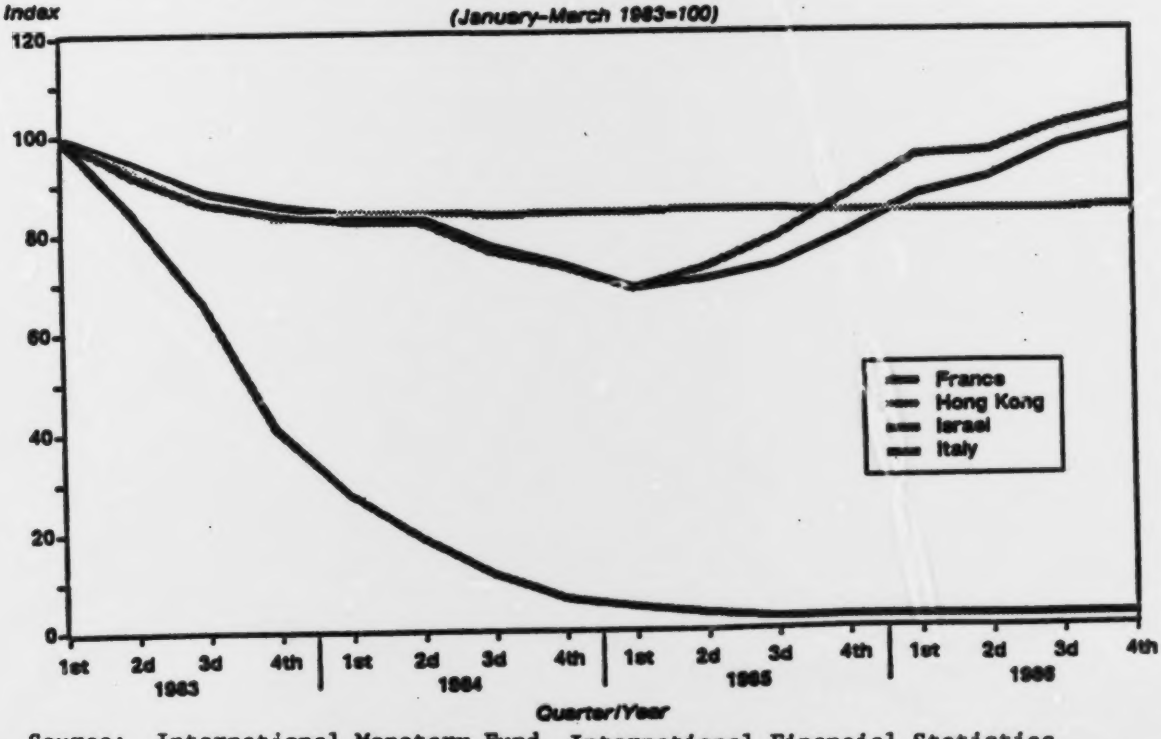


Figure 7-5
Exchange rate indexes: France, Hong Kong, Israel, and Italy, nominal versus the U.S. dollar, quarterly 1983-86



Source: International Monetary Fund, International Financial Statistics

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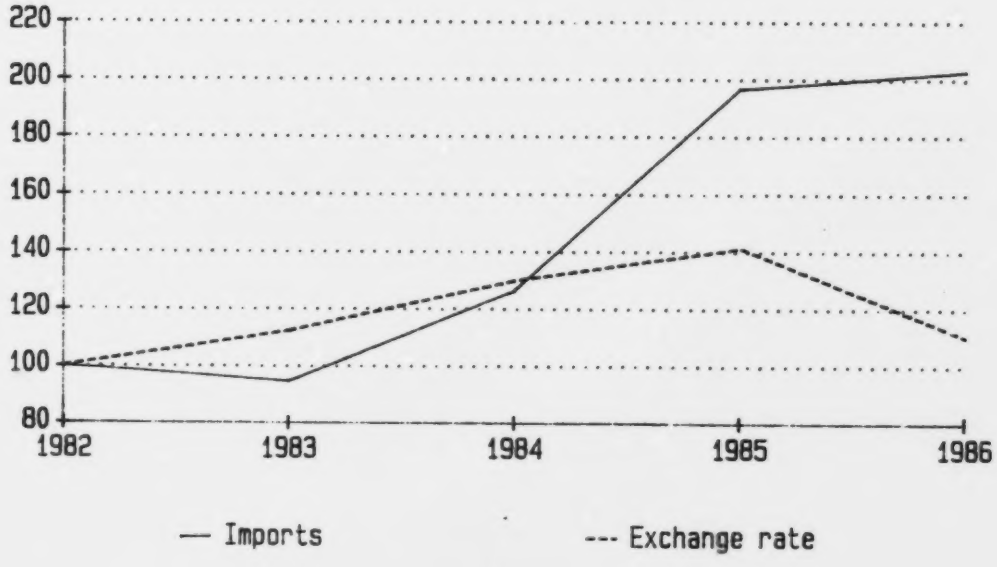
Comparing percentage changes in U.S. imports from the five leading U.S. suppliers with percentage changes in nominal exchange rates, all countries except Israel show, for the period as a whole, a much faster rate of import expansion than of exchange rate change. This is most likely attributable to an overall increase in the supply of precious jewelry as a result of the decline in the price of gold. However, with respect to those currencies which depreciated, the rate of exchange rate depreciation does not appear to be strongly correlated with the rate of import growth in all countries except Thailand. This may be due to the fact that the local value-added content, which is affected by exchange rate changes, varies among supplying countries. With respect to Thailand, currency depreciation is believed to have played a minor role in import growth. Such growth, it is believed, was primarily due to domestic industry expansion.

With respect to Italy and Switzerland, whose currencies appreciated over the period, import growth outpaced the currencies' appreciation. As figure 7-6 shows, although the value of the dollar vis-a-vis the lira rose 41 percent

Figure 7-6
Index of U.S. imports from Italy and the US$/Lira exchange rate, 1982-86



from 1982-85, precious jewelry imports from Italy rose 97 percent. However, in 1986, when the value of the dollar dropped 22 percent, such imports rose a slight 3 percent. The drop in imports from Italy in 1983 can be attributed to a 13-percent increase in the price of gold, which reduced U.S. imports from all countries. The rise in Italian imports is primarily due to an increased marketing effort by the industry aimed at the U.S. market. The industry is attempting to replace Middle Eastern markets with the United States as their primary one. In the case of Switzerland, import growth is believed to be the direct result of their dominance in precious-metal watches and to increased purchases by U.S. buyers in the major auction houses of Geneva and Zurich.

It seems most likely that such exchange-rate changes, primarily depreciations of trading partner currencies, helped the competitiveness of Hong Kong, Israel, and Thailand, either by allowing them greater pricing flexibility or in providing greater profit margins in the U.S. market, but they do not relate closely to, or appear to account for, differences in the comparative rates of growth among competitors and high rates of import growth overall.

In that connection, the 4-year, 9.7-percent annual average rate of growth in U.S. apparent consumption of all precious jewelry was nearly 50-percent greater than the 6.3-percent growth in per capita personal disposable income, and consumption of precious-metal jewelry grew more rapidly. This is most likely in response to the notable decline in the price of precious-metal jewelry compared with that of other precious jewelry. U.S. producers have concentrated less on the precious-metal market segment because it has greater production cost disadvantages than in gemstone jewelry.

7.6. Marketing techniques

Trade shows are the principal marketing technique used in the precious jewelry industry and are generally divided between those strictly for retailers and those for suppliers or manufacturing jewelers. Different shows often play different roles in the industry. Retail trade shows, as the name implies, are usually restricted to buyers and representatives of small retailers, large stores or chains of stores and account for the majority of all trade shows. Most shows are held annually, with some being held during every month except December; the most important ones are held in the spring and fall for the coming fashion and holiday seasons. Although some shows are devoted exclusively to precious jewelry, many often include costume products and other suppliers. Taking orders at such shows is important to exhibitors, however, there are many other reasons to exhibit at and attend them. Among these reasons are the chance to meet with current and potential customers and suppliers in a central location; provide a means for viewing competition; unveil new products or styles and get an immediate market reaction; view the latest styles and trends of competitors for design input; and provide exposure and visibility to a firm that will help develop a reputation. For many years, these shows primarily showcased the products of U.S. companies. Recently, however, many foreign suppliers have obtained space in order to enter the mainstream of the U.S. marketplace.

Generally, products exhibited are finished goods and orders are taken for future delivery. However, since these shows are often independently administered by national, regional, or local trade associations, sales policies among them differ. In some shows, delivery of products is allowed on the premises, and in others, delivery is strictly forbidden. At still others, delivery is allowed for some exhibitors but restricted for others. For example, some shows only allow delivery by importers or stone dealers.

Trade shows for manufacturing jewelers generally exhibit machinery, new production technologies or techniques, and semi-processed goods. Attendants at these shows are usually restricted to manufacturing jewelers or suppliers and often contain exhibitions by foreign machinery producers. In general, sales policies at these shows allow the taking of orders, but restrict delivery until either the end of the show or some future delivery date.

Foreign trade shows are also important to precious jewelry producers. The two major foreign trade shows are in Basel (Switzerland) and Vicenza (Italy). Many U.S. representatives attend these shows in order to view new products and machinery designed by foreign manufacturers. They also provide U.S. buyers with an opportunity to call on foreign suppliers at their plants. For domestic producers, foreign shows provide a showcase for their wares at a central location for buyers from many foreign countries; however, in recent years, the U.S. presence at these shows has been limited but is expanding.

According to Commission questionnaire responses, the U.S. industry held a competitive advantage over foreign precious jewelry producers in most facets of marketing during 1982-86. Foreign suppliers were favored in some cases because they were reportedly more flexible in minimum quantities required for orders and allowed for a wider range of design exclusivity. In general, the cost advantage for imports reportedly allows for greater tolerances on late deliveries, longer leadtimes, and higher inventory depletion risks. The domestic advantages reported in the questionnaires were most pronounced with respect to shorter delivery time, overall availability of product, and historical supplier relationships. The following tabulation summarizes responses to Commission questionnaires related to these factors in the U.S. market between U.S.-made precious jewelry and imports. The numbers represent the percent of total responses indicating a preference:

Factor	Distribution of responses for selected marketing factors related to U.S.-made costume jewelry versus imports, by country with competitive advantage 1/			Ratio	
	Domestic (D)	Foreign (F)	Equal (S)	(F)/(D)	(D)/(F)
Overall product availability	67	19	14	0.3	3.5
Shorter delivery time	80	10	10	.1	8.0
Historical supplier relationship	64	14	22	.2	4.6

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

Domestically produced goods were heavily favored in all of these factors. However, with respect to having a historical supplier relationship, 22 percent of all responses indicated that domestic and imported products were equal. This can probably be attributed to short-term relationships that have developed in recent years. With respect to overall product availability, 60 percent of all responses favored domestic products, and 19 percent indicated that foreign products held an advantage. Finally, four-fifths of all responses indicated that domestically produced products held an advantage with respect to having a shorter delivery time.

7.7. Effect of government regulations

U.S. producers of precious jewelry report that foreign producers have a competitive advantage in various government policies which affect the precious

jewelry industry. Most national jewelry-producing industries are reportedly affected by policies that range from facilitating exports and imposing additional production costs on the industry to alleged subsidies in some countries. Countries that were cited as benefiting most from their government policies were Italy, Hong Kong, Israel, and Thailand. In addition, an advantage may be enjoyed by foreign producers that relocate to areas that are tax free or have low taxes, such as some Caribbean countries. In fact, this advantage may also pertain to U.S. manufacturers who relocate production facilities to these areas, or to areas that may be afforded preferential tariff treatment under the U.S. Generalized System of Preferences (GSP) or other programs. The U.S. industry has also voiced concern about the increasing financial burden of meeting U.S. regulatory requirements, such as those imposed by the Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA), which industry representatives believe put the U.S. industry at a competitive disadvantage. Although similar regulations reportedly exist in most major competing nations, enforcement of such regulations are reportedly less strict than in the United States. Other U.S. laws, including minimum wage laws and prohibition against home work, also reportedly impose additional disadvantages on U.S. producers.

Another difference is in the area of import valuation. Most U.S. rates of duty are applied against the customs value of imports, which do not include charges for freight, insurance, and other charges incurred in transportation. Foreign tariff rates are usually applied against a value for imports that does include such charges. Hence, numerically equivalent foreign and U.S. tariff rates are not actually equal. Ad valorem duties in the United States are assessed on lower valued goods and, therefore, a lower duty is collected in the United States than that imposed by foreign customs services.

Further problem areas reported by the domestic industry include arbitrary application of local trademarking and precious-metal-content-marking laws. Such laws exist in most major markets; however, the application of these laws, reportedly not enforced or selectively enforced, places additional costs on those producers who abide by them. Domestic exporters allege that certain export markets are more stringent in applying marking laws to U.S. products than to products of other nations. However, conversely, the lack of enforcement of U.S. marking laws reportedly aids domestic producers. In fact, most foreign manufacturers and many domestic producers interviewed for this study supported the establishment of an official U.S. assay office that could test and certify both domestic and foreign products to ensure proper precious-metal content and markings.

The most frequently reported U.S. competitive disadvantage was in the area of foreign governments allegedly subsidizing local precious jewelry industries in various ways. Alleged direct subsidies supporting the development of local industries reportedly exist in India and Thailand. These subsidies reportedly consist of low-cost loans to producers, the supply of raw gold at less than market prices, and significant support of export promotional activities through financing participation in foreign trade shows, hosting foreign buyers, and sponsoring trade missions. The U.S. Government provides limited support of U.S. export promotional activities. The most controversial allegation deals with the claiming of a production loss, allowed by the Italian Government, on the manufacture of gold jewelry from temporarily imported gold. U.S. industry representatives allege that since the Italian Government allows manufacturers to declare up to 10 percent of gold as lost,

producers can reportedly discount their prices (from the officially mandated cost of gold) by the value of the loss. However, the manufacturer can recover at least some gold and actually looses very little.

Other areas of alleged government involvement include the international lack of design protection enforcement. Many domestic and foreign producers allege that designs are often copied by other manufacturers without permission and without recourse. In addition, jewelry is sometimes used as a means to circumvent restrictions on currency transfers from certain countries.

Chapter 8. Tariff Treatment

Precious jewelry articles are classifiable in most world markets according to its component material. Generally, these materials are divided between metal and mineral. Precious-metal jewelry is usually distinguished between silver jewelry and that of gold and other precious metals, or between rolled and filled metals. Gemstone jewelry is usually classified as articles consisting of or incorporating precious or semi-precious stones, or pearls. A product would be classified according to the material that comprises the greatest portion of the total value of the entire article. Also included in most cases, are unfinished items that are used in the assembly of jewelry, or, after minor alterations, can be considered jewelry.

8.1. U.S. customs treatment

Imported precious jewelry is classified under Tariff Schedules of the United States (TSUS) items 740.11, 740.12, 740.13, 740.14, 740.15, 740.55, 740.70, 745.66 and 745.67 (pt.), 1/ The TSUS, unlike most national schedules, provides specific breakouts for certain precious jewelry products. These products include necklaces and neck chains, almost wholly of gold, incorporating various styles of links. Rope necklaces and neck chains, whether handmade or machinemade, are classifiable under TSUS item 740.11. Such chain products incorporating two or more different links are classifiable under TSUS item 740.12, mixed link necklaces and neck chains. The bulk of imported chain products are classifiable under TSUS item 740.13, necklaces and neck chain made of one style of link, other than rope. Articles of chain produced in continuous lengths, whether or not cut to specific lengths, for use in the manufacture of articles of jewelry are classifiable under TSUS item 740.70. Among other precious-metal jewelry provisions are those for religious articles (crucifixes and medals made of precious metal), TSUS item 740.55; clasps for use in jewelry, made of precious metal other than silver, TSUS item 745.66; and clasps for use in jewelry, made of silver, part of TSUS item 745.67. Any other jewelry article, made in chief value of precious metal, is classifiable under TSUS item 740.14. Most precious jewelry articles enter the United States under TSUS items 740.13 and 740.14; Item 740.14 accounts for the vast majority. Precious jewelry set with precious or semiprecious stones, or natural pearls, as its chief component value (herein referred to as gemstone jewelry) is classifiable under TSUS item 740.15.

Table 8-1 shows the U.S. rate of duty applicable to imports of precious jewelry included in this investigation. The rates of duty listed include those prior to 1980 when the Tokyo Round of Multilateral Trade Negotiations (MTN) set staged rate reductions through 1987, the column 1 final stage rate of duty applicable in 1987, and the column 2 rate, 2/ The rates of duty in column 1 are most-favored-nation (MFN) rates, and are applicable to imported products from all countries except those Communist countries and areas enumerated in general headnote 3(d) of the TSUS 3/ and certain countries which

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1/ Selected portions of the TSUS related to these items are presented in app. H.

2/ The staged rate reductions negotiated under the Tokyo Round for the United States and selected foreign countries are presented in app. O.

3/ The only Communist countries currently eligible for MFN treatment are the People's Republic of China, Hungary, Romania, and Yugoslavia.

Table 8-1
Precious jewelry: U.S. rates of duty, pre-MTN, final 1987, and column 2 rates of duty

(Percent ad valorem)

TSUS Item No. 1/	Description	Pre-MTN Col. 1 rate of duty	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1, 1987 2/	Col. 2 rate of duty 3/
	Jewelry and other objects of personal adornment and small articles ordinarily carried in the handbag or on the person for mere personal convenience, all the foregoing, and parts therefore, of precious metal (including rolled precious metal), of precious stones, of natural pearls, of precious metal (including rolled precious metal) set with semi-precious stones, cameos, intaglios, amber, or coral, or of any combination of the foregoing:			
	Other:			
	Of precious metal:			
	Necklaces and neck chains, almost wholly of gold:			
740.11A*	Rope	12	6.5	80
740.12A*	Mixed link	12	6.5	80
740.13A*	Other	12	6.5	80
740.14A*	Other	12	6.5	80
740.15A*	Other	12	6.5	80
	Religious articles of a purely devotional character designed to be worn on apparel or carried on or about or attached to the person:			
	Crucifixes and medals:			
740.55A	Of precious metals (including rolled precious metals)	17.5	7.8	65
	Rope, curb, cable, chain, and similar articles produced in continous lengths, all the foregoing, whether or not cut to specific lengths and whether or not set with imitation pearls or imitation gemstones, of metal or of metal and such pearls or gemstones, suitable for use in the manufacture of articles provided for in this subpart:			
	Of precious metals (including rolled precious			
740.70A	metals)	17	7	80
	Clasps, handbag and similar frames incorporating clasps, and snap fasteners; all the foregoing and parts thereof:			
	Valued over 20 cents per dozen pieces or parts:			
	For jewelry and other objects of personal adornment:			
740.66A	Of precious metal except silver (including rolled precious metal except silver)	24	6.5	80
	Other:			
745.67 (pt)A	Of silver	55	11	110

1/ The designation "A" means that all beneficiary developing countries are eligible for the GSP. "A*" indicates that certain of these beneficiary developing countries, specified in general headnote 3(e) of the Tariff Schedules of the United States Annotated, are not eligible for GSP.
2/ Rate negotiated in the Tokyo Round of the Multilateral Trade Negotiations in Geneva, to be achieved through 8 annual reductions, with the final reduction effective as of Jan. 1, 1987.
3/ Rate provided in the Tariff Act of 1930 and applied to imported products from those Communist countries and areas enumerated in general headnote 3(d) of the TSUS.

receive preferential tariff treatment under various programs offered by the United States. Among these programs are the Generalized System of Preferences (GSP) 1/ and the Caribbean Basin Economy Recovery Act (CBERA). 2/ Preferential treatment was also granted to imports from least developed developing countries (LDDC's) 3/ and to imports from Israel under the United States-Israel Free Trade Area Implementation Act of 1985. 4/ The rates in column 2 apply to imported products from Communist countries which are enumerated in general headnote 3(d) of the TSUS.

On January 1, 1988, the United States is scheduled to adopt the U.S. version of the Harmonized System (HS) which will make its tariff classification comparable to that of most major trading partners. Under the proposed HS, precious jewelry is classifiable under headings 7113 and 7116. Precious-metal jewelry is classifiable under heading 7113.11, if made of silver, and 7113.19, if made of any other precious metal (including rolled precious metal). Precious jewelry, set with natural pearls and precious or semiprecious stones, is classifiable under part of items 7116.10 and 7116.20, respectively.

The HS provides greater detail of import classification through component material breaks; however, no detail has been added on a product basis. In fact, some has been lost by including the specific breakout for religious articles into other headings, depending on its material. The impact of this new system will vary from commodity to commodity. In general, duty rates will remain at the final MTN negotiated rate for most commodities. However, some products will be assessed a higher duty and some a lower duty. For example, under the TSUS, religious articles are assessed a duty of 4.9 percent; under the HS, such imports are dutied at 6.5 percent or 7 percent, depending upon the material. Also, imports of silver clasps are currently assessed a duty of 11 percent; under the HS, the rate is scheduled to be 6.5 percent. Specific language for product breaks are included as appendix P. Table 8-2 contains a concordance highlighting the classification of precious jewelry products under the TSUS and the proposed HS. The customs treatment applied to U.S. imports of precious jewelry in selected U.S. export markets is presented in appendix Q.

8.2. Preferential treatment

Most developed countries offer preferential tariff treatment to imports from developing countries under a variety of different national programs. The most widely used is the GSP. Several countries also offer preferential

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1/ See footnote 1 on p. 6-21 for a description of the GSP.

2/ See footnote 1 on p. 6-29 for a description of the CBERA.

3/ The preferential rates of duty designated at the LDDC rates reflect the full U.S. MTN concession rates implemented without staging for particular items and apply to covered products of the LDDC's, enumerated in general headnote 3(e) of the TSUS. Where no rate of duty is designated as an LDDC rate for a particular item, the col. 1 rate of duty applies.

4/ The preferential rates of duty under the United States-Israel Free Trade Area Implementation Act of 1985, reflect the full U.S. MTN concession rates implemented without staging for products of Israel, as provided in general headnote 3(e)(viii) of the TSUS. Where no rate of duty is provided in the "Special" column of the TSUS for products of Israel for a particular tariff item, the rate of duty in col. 1 applies.

Table 8-2
Precious jewelry: Concordance of tariff classifications under the TSUS, the proposed HS with 1987 rates of duty, and proposed rates for the HS

Product description	TSUS item	1987 duty Percent	HS heading	Proposed duty Percent
Necklaces and neck chains:				
Rope:				
Of silver	740.1400	6.5	7113.11.20	27.5
			7113.11.50	6.5
Of gold	740.1100	6.5	7113.19.21	6.5
Of base metal clad with precious metal	740.1100	6.5	7113.20.21	6.5
Mixed link:				
Of silver	740.1400	6.5	7113.11.20	27.5
			7113.11.50	6.5
Of gold	740.1200	6.5	7113.19.25	6.5
Of base metal clad with precious metal	740.1200	6.5	7113.20.25	6.5
Other:				
Of silver	740.1400	6.5	7113.11.20	27.5
			7113.11.50	6.5
Of gold	740.1300	6.5	7113.19.29	6.5
Of base metal clad with precious metal	740.1300	6.5	7113.20.29	6.5
Precious-metal jewelry other than chain:				
Of silver	740.1400	6.5	7113.11.50	6.5
			9113.10.00	6.5
Of gold	740.1400	6.5	7113.19.50	6.5
			9113.10.00	6.5
Of base metal clad with precious metal	740.1400	6.5	7113.20.50	6.5
			9113.10.00	6.5
Gemstone jewelry:				
Of natural pearls	740.1500	6.5	7116.10.10	6.5
Of cultured pearls	740.1500	6.5	7116.10.20	11.0
Of precious or semiprecious stones	740.1500	6.5	7116.20.10	6.5
			9113.10.00	6.5
Crucifixes and medals:				
Of silver	740.5500	7.8	7113.11.50	6.5
Of gold	740.5500	7.8	7113.19.50	6.5
Of base metal clad with precious metal	740.5500	7.8	7113.20.50	6.5
Of precious or semiprecious stones	740.5500	7.8	7116.20.10	6.5
Rope, curb, cable, chain, and similar articles produced in continuous lengths:				
Of silver	740.7000	7.0	7113.11.10	7.0
Of gold	740.7000	7.0	7113.19.10	7.0
Of base metal clad with precious metal	740.7000	7.0	7113.20.10	7.0
Jewelry clasps:				
Of silver	745.6720	11.0	7113.11.50	6.5
			7113.20.30	6.5
Of gold	745.6600	7.0	7113.19.30	6.5
Of base metal clad with precious metal	745.6600	7.0	7113.20.30	6.5

treatment to nations located in the same region, or with which the country maintains special ties. According to industry sources, preferential tarifff treatment in most major markets facilitates trade by reducing the cost of the imported product from developing nations relative to products from developed nations.

The GSP is a preferential tariff program designed to aid developing nations by promoting the development of national industries through exports. The benefits of GSP vary from country to country; each offering nation decides which developing country will receive GSP and what its benefits will be. The benefits are awarded on a commodity basis. The offering nation can restrict the commodities receiving preferential tariff treatment to those that do not compete with domestic industries, or to those that are at or below a predetermined level of imports or share of total imports of that commodity. This allows the offering nation to protect its interests while at the same time provide some benefits to developing nations.

In general, countries that are designated as developing for purposes of the GSP are classified the same by most major trading nations offering such programs. 1/ However, depending on the relative competitiveness of the respective national industry, designated beneficiary countries vary among offering nations. For example, the United States does not extend GSP eligibility to imports of precious jewelry from Hong Kong because they exceeded the statutory competitive-need limits. In contrast, the European Community excludes imports of precious jewelry from Taiwan for preferential tariff treatment. Table Q-6 of appendix Q lists the preferential tariff treatment for precious jewelry articles offered in selected foreign markets.

Among other U.S. programs establishing preferential duty rates for selected beneficiary countries and products are the CBERA and the United States-Israel Free Trade Area Program. Under the CBERA, precious jewelry products of developing countries in the Caribbean Basin area enter the United States duty free. While under the U.S.-Israeli agreement, all traded products will enter each other's market duty free by 1995. However, certain precious jewelry items, including TSUS items 740.14, 740.55, 745.66, and 745.67, were eligible for duty-free treatment upon enactment of the legislation. With respect to certain precious-metal chain jewelry, TSUS items 740.11, 740.12, 740.13, and 740.70, no change in dutiable status has been made until January 1, 1990, when rates shall be determined for such articles through January 1, 1995. These products remain eligible for duty-free entry under the GSP program.

8.3. Nontariff barriers

In addition to tariffs placed on internationally traded products, several factors allegedly impede the flow of goods that can be considered nontariff barriers (NTB's). NTB's that affect precious jewelry take several forms. Mandatory country-of-origin and precious-metal content markings are viewed by some producers and importers as discriminatory standards imposed in the name

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1/ A list of beneficiary countries eligible for preferential tariff treatment for certain commodities under the U.S. scheme of GSP is included as app. R.

of protecting quality. 1/ The lack of uniform international standards applied to precious-metal alloys, and the allowable tolerances for deviation from these standards, allegedly impose both direct and indirect costs to producers in order to meet the various national standards. This problem is further compounded by the lack of universal marking requirements and technical terminology. For products made from mechanically bonded metals, generally known as either filled or rolled, the minimum required thickness of the plating also varies from country to country. As an example, in the United States it is common for the fineness of gold to be marked in terms of karats, i.e., 10K, 14K, and 18K. However, in most European nations, fineness is marked in terms of the ratio of the weight of gold to the total weight of the article in parts per thousand, 0.585 or 585 parts per thousand. Therefore, a jewelry article marked 0.585 in most European markets would contain an equivalent relative portion of gold to a piece marked 14K in the United States. Products that are exported must be marked according to the specific requirements of the intended market. In addition, most countries also require a valid trademark, country-of-origin mark, or a mark indicating the process of manufacture, for rolled metal on precious jewelry.

The enforcement of these marking standards and regulations also vary from country to country. Some European countries, particularly France, Switerland, and the United Kingdom, have established national assay offices that test and certify the precious-metal content of any article containing a precious metal. 2/ This type of testing reportedly applies to both imported and domestic products and must be completed prior to allowing the merchandise entry into the marketplace. Testing provides the consumer with the knowledge that the article has been examined and certified as to it's precious-metal content; however, it also provides the consumer with an avenue for recourse should it prove defective. Assay offices are reportedly more popular in European countries because of the demand for products made of 18K and higher gold. Since a greater portion of value is accounted for by the gold in these karatages, consumers are more likely to require that products be certified. In the United Kingdom, such testing has been performed for centuries.

Since enforcement varies by market, the testing procedures allegedly impose NTB's on foreign products. Barriers arise from the delivery delay required by testing and also in the alleged arbitary degree of scrutiny afforded products of certain nations. It has been alleged that certain markets scrutinize products from the United States more closely than those from other countries. In this way, either delivery can be delayed, hurting the U.S. producer's reputation, or if the merchandise does not meet specified requirements, it may be held without notice, or destroyed and returned.

Precious-metal content testing can also be influenced by the part of the finished article that is tested. For example, if a test were performed on a neck chain, it is more likely that a proper karatage would be found in the center of the chain as opposed to at either end where the clasp has been soldered to the chain. This is because the solder material, which adds weight to the entire article usually does not add a proportional amount of gold.

1/ Specific marking requirements for country-of-origin and precious-metal content and coating standards are addressed in the following section.

2/ These offices are usually government operated and funded, either directly or indirectly; however, in some cases, they are private laboratories that have been certified and licensed by the government to perform such testing.

There are also other general forms of NTB's that affect the international trade of precious jewelry products. Among these are value-added taxes (VAT's) and licensing requirements. VAT's are charges that are levied on products at different stages of production and are relatively common in most European markets. These charges make foreign products relatively more expensive than domestically produced merchandise because they are applied to the full value of the product, including import duties, and these added costs can significantly increase the price of imported jewelry.

Finally, import-licensing requirements allegedly restrict the flow of trade in several markets. According to industry sources, this form of barrier severely restricts trade in Mexico, the Phillippines, Korea, India, and many Latin American countries.

Chapter 9. Precious Jewelry Marking Standards and Regulations

9.1. Country-of-origin and related markings

Section 304 of the Tariff Act of 1930 (19 U.S.C. 1304) requires that imported products be labeled "in a conspicuous place as legibly, indelibly, and permanently as the nature of the article will permit in such a manner as to indicate to an ultimate purchaser in the United States, the English name of the country of origin of the article." The importance of design and the limited surface area on most jewelry articles often make it impossible to label indelibly the actual piece of jewelry without detracting from its appearance. Therefore, present U.S. Customs Service regulations provide for the use of gummed, stick-on labels or tags to be used on jewelry articles. U.S. industry representatives allege that such stick-on labels are often removed, intentionally or not, after passing through customs and prior to the retail sale of the item. Therefore, consumers have no information on whether the item is imported or domestically produced and cannot consider country of origin in their purchasing decision.

During 1986, the U.S. Customs Service conducted an extensive study of more than 15,200 special cargo examinations, which revealed significant country-of-origin marking violations for imported products. 1/ Prior to undertaking this study, customs officials had estimated that only 2 percent to 3 percent of imported goods were not legally marked with the country of origin. Jewelry was selected as a special commodity to be studied during the last quarter of 1986, October 1 through December 31. Out of 3,347 examinations of jewelry imports, the violation rate of country-of-origin marking was 21 percent.

In a separate, but related matter, the U.S. Customs Service is currently considering a request that a more permanent marking be required on imported Native American-style jewelry. 2/ This is in response to a study completed by the U.S. Department of Commerce, and requested by Congress, titled Study of Problems and Possible Remedies Concerning Imported Native American-Style Jewelry and Handicrafts (Report to the Congress from the U.S. Department of Commerce, July 1985). This study confirmed allegations that some jewelry and crafts dealers and wholesalers remove the country-of-origin labels from imported goods and sell the products as authentic Native American. These allegations were made by representatives of the Native American handicrafts industry.

In response to this study, a coalition of American Indian craftsmen and dealers, with Congressional support, filed a request for a ruling with the U.S. Customs Service, asking that a more permanent marking be required on imported Native American-style jewelry and handicrafts. It is claimed that the removal of such tags negatively affect both the consumer and domestic producers. Materials most often used in Native American-style jewelry include sterling silver, which is a precious metal, and can be set with a variety of stones.

1/ For further information, see International Trade Reporter, Mar. 18, 1987, p. 375.

2/ For further information, see Federal Register, vol. 51, No. 135, July 15, 19[illegible], p. 25574.

Customs is proposing that imported Native American-style jewelry be indelibly marked with the country of origin by cutting, die-sinking, engraving, or stamping. The marking may appear on the clasp, or in some other conspicuous location. Alternatively, a metal or plastic tag indelibly marked with the country of origin may be permanently attached to the article. As of this writing, the U.S. Customs Service has not issued a ruling on this matter; however, all imported precious jewelry may be significantly affected.

With regard to other markings found on precious jewelry articles, the National Gold and Silver Stamping Act of 1906 is considered the most significant piece of legislation governing jewelry marking. This law, as amended, provides that if a domestic producer applies a quality mark, or mark indicating the fineness of precious metal used in production, he also must apply a registered trademark. However, this law does not state that precious jewelry must have a trademark and/or a quality mark. Imported jewelry, which already must have a country-of-origin mark is also required to follow the same U.S. trademarking laws. The trademark must appear immediately adjacent to the quality mark and be equally visible, legible, clear, and distinct. This trademark must be registered in the United States and represent a manufacturer, importer, or seller of the article, or the trade name of the manufacturer or seller. 1/

9.2. Precious-metal content and coating standards

There are no uniform international standards for fineness or thickness of precious-metal plating of any jewelry item. Rather, national standards and requirements affect only those products in a particular market. Because such standards and requirements differ widely between countries, they allegedly distort the free flow of trade and serve as an example of NTB's specific to the jewelry industry.

Table 9-1, highlights national gold standards for minimum legal karat alloys, grades of gold in commercial use, and legal tolerances for gold compounds in the United States and selected U.S. export markets. The minimum legal karat alloy for commercial use in the United States is 10 karat with a legally permitted deviation of 3 parts per thousand or 0.003. Generally, these tolerance bands are applicable to minimal standards for marking requirements. In practice, any fineness above the minimum is acceptable. Therefore, legally, 14K gold can have a precious-metal content fineness between 0.580 and 0.586. International standards for sterling silver are almost universal at 925 parts of silver per 1,000 parts of alloy or 92.5 percent fine silver; however, lesser qualities of silver are used and sold outside of the United States, generally in 0.875 or 0.750 parts of silver. In the United States, sterling silver is the most common commercial grade and fine silver is defined as 99.9 percent pure.

The only way to precisely determine that an article of precious jewelry is legally acceptable is to assay it. However, since the United States does not require quality tests, merchandise enters the U.S. market under the presumption that the quality mark is accurate. In practice, some domestic

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1/ For a precise description of specific markings required on jewelry articles, see Guides for the Jewelry Industry, 16 CFR, Part 23, Feb. 27, 1979.

Table 9-1
Precious jewelry: Selected national gold standards for minimum fineness, grades in commercial use, and tolerances for gold alloys and gold-soldered articles

Item	United States	Canada	France	Japan	Switzer-land	United Kingdom	West Germany	Italy
	Legal minimum karat marking							
	10K	9K	-	-	-	9K	-	-
	Grades of gold in commercial use							
Karatage or fineness:								
8K (0.333)....	____	____	____	____	____	____	X	X
9K (0.375)....	____	X	____	X	____	X	X	____
10K (0.417)....	X	X	____	X	____	____	____	____
12K (0.500)....	X	____	____	X	____	____	____	X
14K (0.585)....	X	X	____	X	X	X	X	X
18K (0.750)....	X	X	X	X	X	X	X	X
20K (0.833)....	____	____	X	X	____	____	____	____
20+K.....	____	X	X	X	____	X	____	____
	Legal tolerances for precious-metal compounds							
Gold alloys....	0.003	0.003	0.003	0.003	0.000	0.000	0.010	0.000
Gold-soldered articles.....	.007	.007	.003	.003	.000	.000	.010	.010

Source: The Jewelry Manufacturers Guide to International Markets, Manufacturing Jewelers and Silversmiths of America, 1984.

producers reportedly have in-house testing facilities, whereas others subcontract for testing. The United Kingdom, France, and Switzerland, have national assay offices which test precious jewelry articles before they enter the market for distribution.

The U.S. Federal Trade Commission (FTC) issues industry guides that are administrative interpretations of laws administered by the FTC and are provided for the guidance of the public in conducting its affairs in conformity with legal requirements. 1/ In effect, these guides define trade practices in the U.S. market. For example, the guides indicate that "It is an unfair trade practice to sell or offer for sale any industry product . . . having the capacity and tendency or effect of deceiving purchasers . . . as to the presence of gold or gold alloy in the product . . ." 2/ Various subsections of the FTC guidelines cover all precious jewelry, including that made of gold, silver, and gemstones, including pearls and precious and semiprecious stones. Further, these guides also describe the proper standards and descriptions for filled or rolled metals. In general, such metals consist of a base metal upon which a plating of substantial thickness is applied by mechanical means. The plating metal must be a proper quality precious metal,

1/ 16 CFR, Part 17, Application of Guides in Preventing Unlawful Practices.
2/ 16 CFR 23.5.

generally either a gold or silver alloy. In establishing these guidelines, the FTC sets the standards and requirements that must be met in order to legally conduct business in the U.S. market.

The standards and terminology for products made of filled metals vary from country to country and are listed in table 9-2 for selected markets.

9.3. Enforcement of regulations

Since national standards and requirements can impede the flow of jewelry trade, international and national groups have formed to address the issue. Generally, these organizations deal with all jewelry products and make no distinction between costume and precious jewelry. The primary international body is the International Confederation of Jewelry, Silver, Diamonds, Pearls and Stones (CIBJO). This group includes 16 national industry respresentatives, mostly from Europe, that meet annually to discuss and set standards for the international jewelry industry. The United States is represented in this body through the Manufacturing Jewelers and Silversmiths of America, a national trade association. Topics discussed include marking and stamping requirements for precious metals, stone grading, and the reduction of trade barriers on jewelry products.

There is also an international treaty that facilitates trade in precious-metal articles by establishing standards and markings to be used by it's contracting parties and recognized by trading partners. The "Convention on the Control and Marking of Articles of Precious Metals" was signed November 15, 1972, by seven European countries at Vienna, Austria. Articles controlled and marked according to the provisions of the Convention do not require further assaying or marking of any kind except for the purpose of check tests. The convention requires that articles of precious metals (including silver, gold, platinum, or alloys thereof) be assayed by an authorized body and marked with an official stamp. The stamp indicates the article has been offically assayed and is composed of a trademark indicating the sponsor, the type and fineness of metal, and an official mark indicating it has satisfied the articles of the convention. This mark may also be registered with the World Intellectual Property Organization. The convention can be joined by any nation which is a member of the United Nations, and has made necessary arrangements to comply with the requirements of the convention. Currently, the signatories are Austria, Finland, Norway, Portugal, Sweden, Switzerland, and the United Kingdom; however, only four have ratified (Austria, Finland, Sweden, and Switzerland). The United States is not a party to the convention.

Domestically, the Jewelers Vigilance Committee (JVC) works to preserve the jewelers' integrity to the consumers' benefit and to maintain fair competition and standards for the entire industry. According to industry sources, the JVC works closely with the FTC to establish guidelines and procedures for the domestic jewelry industry. The JVC recently launched a joint venture with an Ohio Better Business Bureau to monitor jewelry for compliance with FTC guidelines. The jewelry is examined for a quality mark and trademark. The JVC has also begun a program to monitor major jewelry trade show exhibitors to ensure proper quality marking and trademarking.

Table 9-2
Precious jewelry: Precious-metal fineness and coating standards for mechanically bonded metals in selected countries

Country	Item description	Standards
United States.....	Gold filled	An industry product on which there has been affixed by mechanical means, a plating of gold alloy of not less than 10K fineness that is of substantial thickness 1/ and if the plating constitutes at least 1/20th of the weight of metal in the entire article.
	Vermeil (gold on silver)	A coating of gold 120/one-millionth (0.00012) of an inch.
France.....	Dore (rolled)	The minimum fineness of the gold used for plating must be 12K (500 parts gold per thousand) and a minimum thickness of the plating between 0.5 and 3 microns.
	Gold filled	The gold coating must be of sufficient thickness that, if the base metal coating were dissolved, the precious metal coating would remain as a shell.
	Vermeil (gold on silver)	Silver articles with a minimum thickness of 2 microns of the legal standard covered in gold.
Japan.....	Rolled gold filled	A thickness of 1/20th of 18K gold.
Switzerland.....	Rolled gold (double waren)	A minimum fineness of at least 8 microns in a gold alloy of at least 375 thousandths (9K).
West Germany.....	Rolled gold (double)	A minimum fineness of which at least 10 thousandths is accounted for by pure gold contained in the coating to the weight of the entire article.
	Gold plated	A minimum fineness of which at least 3 thousandths is accounted for by pure gold contained in the coating to the weight of the entire article.
	Vermeil (gold on silver)	A minimum fineness of which less than 3 thousandths is accounted for by pure gold contained in the coating to the weight of the entire article.

1/ Substantial thickness means that the plating must be of such thickness as to ensure a durable coverage of the base metal to which it has been affixed.

Source: The Jewelry Manufacturers Guide to International Markets, Manufacturing Jewelers and Silversmiths of America, 1984.

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As stated above, the basic statutory requirements concerning country of origin markings are set forth in section 304 of the Tariff Act of 1930. The U.S. Customs Service enforces these marking requirements on all imported merchandise at the time of importation. If the U.S. Customs Service discovers at the time of entry that merchandise is not properly marked, the merchandise may be held and not released to the importer until it is properly marked. More commonly, the merchandise will be released on the assurance that the proper marking will be applied and that the posting of a bond will occur to assure such marking. Improperly marked articles are also subject to an additional duty of 10 percent ad valorem (sec. 304(c)). Persons convicted of defacing, removing, altering, covering, obscuring, or obliterating any required mark with the intent to conceal information given by such mark are subject to a fine of up to $5,000 and imprisonment of up to 1 year (sec. 304(e)). If an importer or a domestic industry is unclear as to how a particular item is required to be marked, there are procedures set forth in the customs regulations for obtaining an administrative ruling on the question. 1/

Improper marking may also constitute an unfair trade practice under section 5 of the Federal Trade Commission Act (15 U.S.C. 45) and section 337 of the Tariff Act of 1930 (19 U.S.C. 1337). Under the FTC Act, the FTC has various enforcement remedies, ranging from encouraging industry compliance through education to issuing orders with the authority to impose civil penalties. Section 337 is administered by the U.S. International Trade Commission. The Commission may exclude from entry into the United States violating articles and/or may issue cease and desist orders against firms or persons found to be violating section 337.

1/ 19 CFR 175 and 177.

Chapter 10. Financial Experience of U.S. Producers

Thirty-five producers supplied usable income-and-loss data on their precious jewelry operations. One firm began producing precious jewelry in 1985; therefore, it provided data for 1985 and 1986 only. These firms together accounted for approximately 17 percent of estimated U.S. producers' shipments of precious jewelry in 1986.

10.1. Overall operations

The data for 35 U.S. producers' overall operations within which precious jewelry is produced are presented in table 10-1. Aggregate net sales of precious jewelry increased by 15 percent from 1982 to 1984 and, after remaining stable in 1985, increased by 11 percent to $581 million in 1986, an annual rate of growth of 6.1 percent. In comparison, net sales of all manufacturing corporations increased 12 percent, from $2,039 billion in 1982 to $2,280 billion in 1986, an annual rate of growth of 2.8 percent (table 10-2). In constant 1982 dollars, precious jewelry sales grew at a 5.1-percent annual rate over the 5-year period. After a 1.8-percent decline from 1982 to 1983, real net sales rose 24 percent through 1986 when they amounted to $559 million. Respondents faired better in sales growth, at 27 percent over the 4 years, than the industry as a whole, which showed a 19-percent growth as measured by the value of shipments.

Operating income on overall operations rose by 43 percent from 1982-85 and then declined by 24 percent from 1985 to 1986 for an overall increase of 9 percent. Adjusted for inflation, operating income grew by 1.2 percent per year over the 5-year period and amounted to $33 million in 1986. In contrast, nominal operating income of all U.S. manufacturing corporations increased by 51 percent from 1982 to 1984 and then declined annually to 1986, showing an overall period increase of 22 percent. The return on sales declined from 7 percent in 1982 to 4 percent in 1983, increased to 8 percent in 1985, and then dropped to 6 percent in 1986. These rates of return were slightly better than those for all U.S. manufacturing corporations in 1982, 1985, and 1986, but were slightly worse in 1983 and 1984, when gold prices were relatively high and volatile.

Except for a sharp drop to $6 million in 1983, net income before taxes ranged between $18 million and $28 million annually during 1982-86. Adjusted for inflation, net income dropped 20.8 percent over the period and amounted to $17.6 million in 1986. As a share of net sales, net income fell from 5 percent in 1982 to 1 percent in 1983 and then returned to 5 percent in 1985 before dropping back to 3 percent in 1986. Compared with net income before taxes for all U.S. manufacturing corporations, the pattern was not consistent, as income rose from $109 billion in 1982 to $166 billion in 1984 and then decreased to $132 billion in 1986; as a share of net sales, this ratio was greater than that for precious jewelry producers, remaining about 6 percent over the period.

The reason for the decline in operating income in 1983 appears to be an 11-percent increase in general, selling, and administrative (GSA) expenses combined with a 5-percent increase in cost of goods sold (COGS), which was spurred by an increase in producer prices of 5.9 percent. Both costs increased in absolute dollars and also as a share of net sales, from 27 percent in 1982 to 29 percent in 1983 and from 66 percent to 67 percent,

Table 10-1
Income-and-loss experience of 25 U.S. producers on the overall operations of their establishments within which precious jewelry were produced, accounting years 1982-86

Item	1982	1983	1984	1985	1986	Percentage change, 1985 from 1982	Percentage change, 1986 from 1985	Average annual change, 1986 from 1982
Net sales.....1,000 dollars..	457,699	476,054	525,611	525,216	580,734	14.9	10.5	6.1
Cost of goods sold.....do....	302,223	317,164	354,402	334,469	383,995	10.7	14.8	6.2
Gross profit.....do....	155,476	158,890	171,209	190,747	196,779	22.7	3.2	6.1
General, selling, and administrative expenses.....do....	124,437	137,782	139,047	146,444	162,985	17.7	11.3	7.0
Operating income.....do....	31,039	21,108	32,162	44,303	33,814	42.7	-23.7	2.2
Other income or (expense), net.....do....	(8,875)	(15,229)	(13,465)	(16,768)	(15,576)	88.9	-7.1	15.1
Net income before income taxes.....do....	22,164	5,889	18,697	27,535	18,238	24.2	-33.8	-4.7
Depreciation and amortization expense included above 1/.....do....	4,338	5,302	5,186	6,334	7,357	46.0	25.6	16.3
Cash-flow from operations 2/.....do....	26,502	11,171	23,883	33,869	26,195	27.8	-22.7	-.3
As a share of net sales:								
Cost of goods sold.....percent..	66.0	66.6	67.4	63.7	66.1	-	-	-
Gross profit.....do....	34.0	33.4	32.6	36.3	33.9	-	-	-
General, selling, and administrative expenses.....do....	27.2	28.9	26.5	27.9	28.1	-	-	-
Operating income.....do....	6.8	4.4	6.1	8.4	5.8	-	-	-
Net income before income taxes....do....	4.8	1.2	3.6	5.2	3.1	-	-	-
Number of firms reporting operating losses.....	8	5	8	8	7			
Number of firms reporting net losses.....	12	9	7	9	10			

1/ Includes expenses for 28 firms which accounted for 89 percent of total net sales in 1986.
2/ Defined as pretax net income plus depreciation and amortization expense.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 10-2
All U.S. manufacturing: Income and loss experience, 1982-86

Item	1982	1983	1984	1985	1986	Percentage change, 1985 from 1982	Percentage change, 1986 from 1985	Average annual change, 1986 from 1982
	Million dollars							
Net sales, receipts, and operating revenues.....	2,039,336	2,119,177	2,335,047	2,331,388	2,280,065	14.3	-2.2	2.8
Depreciation, depletion, and amortization of property, plant and equipment.....	73,955	80,022	91,574	92,068	96,823	25.6	4.3	6.9
All other operating costs and expenses, including costs of goods sold, and sales, general and administrative expenses.....	1,859,941	1,914,329	2,099,320	2,100,689	2,054,995	12.9	-2.2	2.5
Operating income.....	105,440	124,826	159,153	137,631	128,257	30.7	-6.9	5.0
Net nonoperating income or (loss)..	2,476	8,710	6,410	(797)	3,616	-	-	.9
Net income before income taxes.....	100,916	133,536	165,563	137,034	131,873	25.8	-3.8	4.9
	Percent							
As a share of net sales:								
All other operating costs and expenses, including costs of goods sold, and sales, general and administrative expenses....	91.2	90.3	89.5	90.1	90.1	-	-	-
Operating income.....	5.2	5.9	6.8	5.9	5.6	-	-	-
Net income before income taxes...	5.3	6.3	7.1	5.9	5.8	-	-	-

Source: Quarterly Financial Report for Manufacturing and Trade Corporations, various issues, U.S. Department of Commerce.

respectively. The improvement in operating margins during 1983-85 was due primarily to rising sales and a drop in COGS as a share of net sales, from 67 percent in 1983 to 64 percent in 1985. The decline in the operating margin in 1986 is caused mainly by the increase in COGS relative to sales, which resulted from rising gold prices. Although sales registered an 11-percent increase in 1986, the COGS increased by 15 percent, and COGS, as a share of net sales, increased to 66 percent in 1986. It should be noted that between 1983 and 1985, producer prices for precious jewelry fell 4 percent. The shift toward direct-to-retailer sales and consequent buildup in inventories by an increasing number of manufacturers would be expected to result in a greater increase in COGS as a share of net sales than was reported. However, some of the largest of the 35 respondents supplying financial data already distributed goods in this manner, and therefore showed no relative increase in their COGS.

On the basis of 31 questionnaire responses for components of COGS for precious jewelry operations, the overall increase resulted primarily from the increased use of imported products by U.S. producers and the rising cost of materials (table 10-3). The use or resale of imported products showed the

Table 10-3
Components of costs of goods sold by 31 U.S. producers on the overall operations of their establishments within which precious jewelry were produced, accounting years 1982-86

Item	1982	1983	1984	1985	1986	Percentage change, 1985 from 1982	Percentage change, 1986 from 1985	Average annual change, 1986 from 1982
Use or resale of imported product.....1,000 dollars..	20,266	27,511	26,321	27,280	32,909	34.6	20.9	12.9
Domestic raw materials.do....	171,367	172,182	203,755	194,509	215,179	13.5	10.6	5.8
Direct labor.....do....	33,018	36,043	39,710	37,574	40,809	13.8	8.6	5.4
Other factory costs and inventory changes....do....	57,547	54,387	59,945	57,454	67,576	-.2	17.6	4.1
Cost of goods sold.....do....	282,198	290,123	329,731	316,817	356,553	12.3	12.5	6.0
Net sales.....do....	432,538	439,883	483,503	483,464	526,689	11.8	8.9	5.0
As a share of cost of goods sold:								
Imported product..percent..	7.2	9.5	8.0	8.6	9.3	-	-	-
Domestic raw materials.....do....	60.7	59.3	61.8	61.4	60.3	-	-	-
Direct labor.....do....	11.7	12.4	12.0	11.9	11.4	-	-	-
Other factory costs..do....	20.4	18.7	18.2	18.1	19.0	-	-	-
As a share of net sales:								
Cost of goods sold...do....	65.2	66.0	68.2	65.5	67.7	-	-	-
Domestic raw materials.....do....	39.6	39.1	42.1	40.2	40.9	-	-	-

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

greatest increase over the period at 13 percent per year; however, as a share of total costs, they fluctuated over the period but rose from an overall 7 percent of total costs in 1982 to 9 percent in 1986. Raw materials accounted for the largest share of total costs, ranging from a high of 62 percent of total costs in 1984 to a low of 59 percent in 1983.

Other expenses, consisting primarily of interest expense, nearly doubled from $9 million in 1982 to $15 million in 1983 and amounted to approximately 3 percent of the sales in all 5 years. During 1982-86, U.S. producers reported other expenses that ranged between $8.9 million and $16.8 million.

Pretax net-income margins followed the same trend as the operating income margins.

Cash-flow from operations declined $15 million from 1982 to 1983, rose $23 million between 1983 and 1985, and then dropped $8 million in 1986 for an overall 4-year decrease of 1.2 percent. Adjusted for inflation, cash-flow showed a greater decline of 5 percent. Eight firms reported operating losses in 1982, 1984, and 1985 compared with five firms in 1983 and seven firms in 1986. Ten firms sustained net losses in 1986, down from 12 in 1982.

Questionnaire respondents reporting financial results showed slightly greater gains in net sales than the industry as a whole showed in shipments for the 1982-86 period, 26.9 percent compared with 18.8 percent. Net income and cash-flow as summarized here for these firms may also show better-than-industry-average results.

10.2. Precious-metal jewelry products

The data for 29 U.S. producers' precious-metal jewelry operations, accounting for 23 percent of estimated U.S. producer shipments, are presented in table 10-4. Aggregate net sales of precious-metal jewelry increased by 17 percent from 1982 to 1984 and then declined by 2 percent in 1985 before rising by 12 percent to $492 million in 1986. In constant 1982 dollars, such sales fell 5 percent from 1982 to 1983 and then increased at an annual rate of

Table 10-4
Income-and-loss experience of 29 U.S. producers of precious-metal jewelry, accounting years 1982-86

Item	1982	1983	1984	1985	1986	Percentage change, 1985 from 1982	Percentage change, 1986 from 1985	Average annual change, 1986 from 1982
Net sales.....1,000 dollars..	383,110	399,509	448,979	440,493	492,326	15.0	11.8	6.5
Cost of goods sold.....do....	251,921	267,779	307,441	285,272	330,267	13.2	15.8	7.0
Gross profit.....do....	131,189	131,730	141,538	155,221	162,059	18.3	4.4	5.4
General, selling, and administrative expenses.....do....	95,717	109,191	109,602	113,930	130,992	19.0	15.0	8.2
Operating income.....do....	35,472	22,539	31,936	41,291	31,067	16.4	-24.8	-3.3
Other income or (expense), net...do....	(5,216)	(9,356)	(7,299)	(9,050)	(8,971)	80.8	-8.9	14.5
Net income before income taxes...do....	30,256	13,183	24,697	31,441	22,096	3.9	-29.7	-7.6
Depreciation and amortization expense included above 1/.....do....	3,799	4,728	4,635	5,509	7,010	44.8	27.4	16.5
Cash-flow from operations 2/.....do....	34,055	17,911	29,332	36,941	29,106	8.5	-21.2	-3.9
As a share of net sales:								
Cost of goods sold.....percent..	65.8	67.0	68.5	64.8	67.1	-	-	-
Gross profit.....do....	34.2	33.0	31.5	35.2	32.9	-	-	-
General, selling, and administrative expenses.....do....	25.0	27.3	24.4	25.9	26.6	-	-	-
Operating income.....do....	9.3	5.6	7.1	9.4	6.3	-	-	-
Net income before income taxes.do....	7.9	3.3	5.5	7.1	4.5			
Number of firms reporting operating losses.....	5	5	7	6	4			
Number of firms reporting net losses...	7	7	8	6	5			

1/ Includes expenses for 27 firms which accounted for 89 percent of total net sales in 1986.
2/ Defined as pretax net income plus depreciation and amortization expense.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

9 percent through 1986 when they amounted to $472 million. The trend in nominal sales was similar to that of all precious jewelry operations, but the increase was slightly greater. Similar to those respondents for all precious jewelry, sales growth, at 6.5 percent per year over the 4 years, was faster than the overall industry performance which showed a 5.1-percent annual rate of growth as measured by the value of shipments.

Except for a sharp drop to $23 million in 1983, operating income on precious-metal jewelry operations ranged from $31 million to $41 million annually during 1982-86. Adjusted for inflation, the decline over the 5-year period was 16.0 percent. These trends, in both nominal and real terms, were the same as that of all precious jewelry operations. The return on sales declined from 9.3 percent in 1982 to 5.6 percent in 1983, returned to 9.4 percent in 1985, and then dropped to 6.3 percent in 1986. These rates of return followed the same pattern and were slightly greater than those for precious jewelry operations.

Net income before income taxes declined by 56 percent from 1982 to 1983 and then more than doubled to $31 million in 1985 before falling 30 percent to $22 million in 1986. Adjusted for inflation, net income fell an overall 30.0 percent over the 5-year period. As a share of net sales, net income declined from 8 percent in 1982 to 3 percent in 1983 and then increased to 7 percent in 1985 before dropping back to 5 percent in 1986. Compared with net income before taxes for precious jewelry operations, the same pattern pertained, and both the absolute value and ratio to net sales were greater.

The reason for the decline in operating income in 1983 appears to be the combination of a 14-percent increase in GSA and a 6-percent increase in COGS, which was spurred by an increase in producer prices of 9.6 percent. They both increased in absolute dollars and also as a share of net sales, from 25 percent in 1982 to 27 percent in 1983 and from 66 percent to 67 percent, respectively. The improvement in operating margins during 1983-85 was due primarily to rising sales and an anomalous drop in both COGS and GSA as a share of net sales from 67 percent and 27 percent, respectively, in 1983 to 65 percent and 26 percent, respectively, in 1985. The decline in the operating margin in 1986 is caused mainly by the increase in operating expenses including both COGS and GSA relative to sales. Although sales registered a 12-percent increase in 1986, the COGS rose by 16 percent and GSA by 15 percent; COGS and GSA as a share of net sales increased to 67 percent and 27 percent, respectively, in 1986. Producer prices for precious-metal jewelry fell 8 percent between 1983 and 1985.

On the basis of 29 questionnaire responses for components of COGS for precious-metal jewelry operations, the overall increase resulted primarily from the increased use of imported products by U.S. producers and the rising cost of materials (table 10-5). The use or resale of imported products showed the greatest increase over the period at 16 percent per year; however, as a share of total costs, they fluctuated over the period but rose from an overall 7 percent of total costs in 1982 to 10 percent in 1986. Raw materials accounted for the largest share of total costs and ranged from a low of 63 percent of the total in 1983 and 1986 to a high of 66 percent in 1984.

Other expenses, consisting primarily of interest expense, nearly doubled from $5 million in 1982 to $9 million in 1983 and remained about the same at $9 million during 1983-86, approximately 2 percent of the sales in all 5

Table 10-5
Components of costs of goods sold by 29 U.S. producers of precious-metal jewelry, accounting years 1982-86

Item	1982	1983	1984	1985	1986	Percentage change, 1985 from 1982	Percentage change, 1986 from 1985	Average annual change, 1986 from 1982
Use or resale of imported product.....1,000 dollars..	15,357	21,525	21,273	22,486	27,873	46.3	24.1	16.1
Domestic raw materials.....do....	148,518	152,861	186,907	186,558	194,467	12.1	10.8	5.6
Direct labor.....do....	25,467	29,082	31,807	30,366	33,358	14.7	9.8	6.0
Other factory costs and inventory changes.....do....	41,941	40,855	44,129	40,608	40,548	-3.2	19.6	3.7
Cost of goods sold.....do....	232,283	244,343	284,116	259,998	294,246	11.9	13.2	6.1
Net sales.....do....	347,492	355,068	404,028	396,717	440,857	14.2	11.1	6.1
As a share of cost of goods sold:								
Imported product.....percent..	6.6	8.8	7.5	8.6	9.5	-	-	-
Domestic raw materials....do....	63.9	62.6	65.8	64.1	62.7	-	-	-
Direct labor.....do....	11.4	11.9	11.2	11.7	11.3	-	-	-
Other factory costs.....do....	18.1	16.7	15.5	15.6	16.5	-	-	-
As a share of net sales:								
Cost of goods sold.....do....	66.8	68.8	70.3	65.5	66.7	-	-	-
Domestic raw materials....do....	42.7	43.0	46.3	42.0	41.8	-	-	-

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

years. During 1982-86, U.S. producers reported other expenses that ranged between $5.2 million and $9.9 million. Pretax net-income margins followed the same trend as the operating income margins.

Cash-flow from operations declined $16 million from 1982 to 1983 and then doubled between 1983 and 1985 before declining to $29 million in 1986, an overall 5-year decrease of 17 percent. Adjusted for inflation, cash-flow showed a greater decline of 18.1 percent. Five firms reported operating losses in 1982 and 1983 compared with seven firms in 1984, six firms in 1985, and four firms in 1986. Five firms sustained net losses in 1986 compared with seven firms in 1982.

Questionnaire respondents reporting financial results showed greater gains in net sales than the industry as a whole showed in shipments--by 6.5 percent per year to 5.1 percent per year--net income and cash-flow as summarized here for these firms may also show better-than-industry-average results.

10.3. Gemstone jewelry products

Data reported by four U.S. producers of gemstone jewelry are presented in table 10-6. These four firms accounted for approximately 2 percent of estimated producer shipments in 1985. Data concerning 1986 are not available. Aggregate net sales of gemstone jewelry increased at an annual rate of 24.8 percent from 1982-85 and amounted to $27 million in 1985. This increase was signficantly greater than that for overall precious jewelry operations and for precious-metal operations as well. In constant 1982 dollars, the annual rate of growth was 23.8 percent. Questionnaire

Table 10-6
Income-and-loss experience by 4 U.S. producers of gemstone jewelry, accounting years 1982-86

Item	1982	1983	1984	1985	1986 1/	Percentage change, 1985 from 1982	Average annual change, 1985 from 1982
Net sales.....1,000 dollars..	14,101	17,634	22,808	27,410		94.4	24.8
Cost of goods sold.....do....	11,063	13,373	17,381	20,500		85.3	22.8
Gross profit.....do....	3,038	4,261	5,427	6,910		127.5	31.5
General, selling, and administrative expenses.....do....	2,796	3,136	3,091	4,882		74.6	20.4
Operating income.....do....	242	1,125	1,535	2,028		738.0	103.1
Other income or (expense), net.....do....	(624)	(439)	(653)	(434)		-30.4	-11.4
Net income before income taxes.....do....	(382)	686	883	1,594		-	-
Depreciation and amortization expense included above 2/.....do....	329	271	343	563		71.1	19.6
Cash-flow from operations 3/.....do....	(53)	957	1,226	2,157		-	-
As a share of net sales:							
Cost of goods sold.....percent..	78.5	75.8	76.2	74.8		-	-
Gross profit.....do....	21.5	24.2	23.8	25.2		-	-
General, selling, and administrative expenses.....do....	19.8	17.8	17.1	17.8		-	-
Operating income.....do....	1.7	6.4	6.7	7.4		-	-
Net income before income taxes.....do....	-2.7	3.9	3.9	5.8		-	-
Number of firms reporting operating losses..	1	1	1	1			
Number of firms reporting net losses.....	3	2	1	2			

1/ Not available because of confidentiality.
2/ Includes expenses for 4 firms that accounted for 100 percent of total net sales in 1985.
3/ Defined as pretax net income plus depreciation and amortization expense.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

respondents faired significantly better in sales growth, at 94 percent over the 3 years, than the industry as a whole, which showed only a 19-percent growth over the same period, as measured by the value of shipments.

For the companies that reported usable financial data, operating income on gemstone jewelry operations increased almost 10 times from $242,000 in 1982 to $2.0 million in 1985, or by 103 percent per year. This growth was significantly greater than that for precious jewelry and precious-metal jewelry operations reported in Commission questionnaires and for all U.S. manufacturing corporations. The return on sales rose steadily from 1.7 percent in 1982 to 7.4 percent in 1985. These rates of return showed an overall trend that was greater than that for precious-metal jewelry operations during 1982-85.

Net income before income taxes also improved over the period as a net loss in 1982 was reversed in 1983 and net income rose steadily during 1983-85, amounting to $1.6 million in 1986. The rate of growth in net income from 1983-85 was 52.4 percent per year. As a share of net sales, net income was steady at 3.9 percent in 1983 and 1984 before rising to 5.8 percent in 1985. The overall trend in this ratio was opposite that of precious-metal jewelry producers over the period.

The reason for the increase in operating income in 1983 appears to be a combination of the substantial increase in sales and lesser increases in COGS and GSA expenses. Both expenses increased in absolute dollars, but declined as a share of net sales, from 79 percent and 20 percent, respectively, in 1982 to 76 percent and 18 percent, respectively, in 1983. The continued increase

in operating margins during 1983-85 was due primarily to increases in net sales, in absolute value, keeping pace with rising COGS and GSA, 55 percent compared with 53 percent and 56 percent, respectively. However, as a share of net sales, COGS fluctuated on a declining trend from 76 percent to 75 percent and GSA remained approximately 18 percent. Between 1983 and 1985, producer prices for gemstone jewelry rose nearly 3 percent.

On the basis of four questionnaire responses for components of COGS for gemstone jewelry operations, the overall increase resulted primarily from increases in other factory costs and inventory changes which increased at an annual rate of 11.1 percent over the period (table 10-7). As as share of total COGS, other factory costs rose from 27 percent in 1982 to 31 percent in

Table 10-7
Components of costs of goods sold by 4 U.S. producers of gemstone jewelry, accounting years 1982-86

Item	1982	1983	1984	1985	1986 1/	Percentage change, 1985 from 1982	Average annual change, 1985 from 1982
Use or resale of imported product 1,000 dollars..	1,241	1,059	940	1,168		-5.9	-2.0
Domestic raw materials.....do....	25,966	23,921	24,848	28,019		7.9	2.6
Direct labor.....do....	6,872	8,011	8,596	8,397		22.2	6.9
Other factory costs and inventory changes.....do....	12,299	13,402	14,940	16,888		37.3	11.1
Cost of goods sold.....do....	46,378	46,403	49,324	54,472		17.5	5.5
Net sales.....do....	66,128	67,248	73,585	84,584		27.9	8.6
As a share of cost of goods sold:							
Imported product.....percent..	2.7	2.3	1.9	2.1		-	-
Domestic raw materials.....do....	56.0	51.5	50.4	51.4		-	-
Direct labor.....do....	14.8	17.3	17.4	15.4		-	-
Other factory costs. .....do....	26.5	28.9	30.3	31.0		-	-
As a share of net sales:							
Cost of goods sold.....do....	70.1	69.0	67.0	64.4		-	-
Domestic raw materials.....do....	39.3	35.6	33.8	33.1		-	-

1/ Not available because of confidentiality.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

1985. The use or resale of imported products showed the only decline as it dropped at an annual rate of 2.0 percent per year and, as a share of total costs, they dropped over the period from 2.7 percent in 1982 to 2.1 percent in 1985. Raw materials accounted for the largest share of total costs as it dropped from 56 percent in 1982 to 50 percent in 1984. Cost of materials then rose to 51 percent in 1985.

Other expenses, consisting chiefly of interest expense, averaged $538,000 during 1982-85, and amounted to less than 3 percent of sales over all 4 years. During 1982-85, U.S. producers reported other expenses which ranged between $434,000 and $653,000. Pretax net-income margins followed the same trend as the operating income margins.

Cash-flow from operations increased from a loss in 1982 to $957,000 in 1983 and continued to increase to $2.2 million in 1985, an increase of

125.4 percent from 1983 to 1985. Adjusted for inflation, cash-flow showed a gain of 118.4 percent.

Since questionnaire respondents reporting financial results showed significantly greater gains in net sales than the industry as a whole showed in shipments--by 24.8 percent per year to 5.9 percent per year--net income and cash-flow as summarized here for these firms may also show better-than-industry-average results.

10.4. Capital expenditures

Thirty-one questionnaire respondents provided usable data on U.S. producers' capital expenditures in connection with precious jewelry, as presented in table 10-8.

Table 10-8
Capital expenditures by 31 U.S. producers of precious jewelry, 1982-86

Capital expenditures	1982	1983	1984	1985	1986	Share of total capital expenditures-- 1982	1986	Change, 1986 from 1982
	1,000 dollars					Percent		
Environmental control purposes	80	211	192	525	368	1.0	3.3	360.0
Land and land improvements	131	66	64	323	632	1.6	5.7	382.4
Building and leasehold improvements	1,108	792	2,289	1,013	2,512	13.6	22.7	126.7
Machinery, equipment, and fixtures	6,376	5,303	5,718	8,655	7,021	78.2	63.5	10.1
Other	458	465	341	355	530	5.6	4.8	15.7
Total	8,153	6,837	8,604	10,871	11,063	100.0	100.0	35.7
Ratio: 1/ Capital expenditures to net sales percent	3.1	2.5	2.7	3.4	3.1	-	-	-

1/ The ratio was calculated using the net sales of the 31 respondents to Commission questionnaires to producers that provided usable data on capital expenses.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Total capital expenditures reported by U.S. precious jewelry producers decreased from $8 million in 1982 to $7 million in 1983 and then increased annually to $11 million in 1986. Capital expenditures averaged 3 percent of net sales annually during 1982-86. In comparison, capital expenditures by large manufacturing companies dropped from $101 billion in 1981 to $76 billion in 1983. Since then, they have risen by 32 percent to $100 billion in

1985. 1/ As a share of net sales, such expenditures were estimated to average 4.3 percent during 1981-85.

The largest increase during the period was in expenditures for land and land improvements, which rose 382.4 percent and amounted to $632,000 in 1986. Expenditures for environmental control purposes increased from $90,000 in 1982 to $525,000 in 1985 and then fell to $368,00 in 1986. Expenditures on machinery, equipment, and fixtures, which accounted for the greatest share of total capital expenditures, fell from $6.4 million in 1982 to $5.3 million in 1983 and then rose to $.87 million in 1985. Such expenditures then fell to $7.0 million in 1986. In comparison, total purchases of equipment and structures by manufacturing establishments declined 22 percent between 1981 and 1983 and then increased 27 percent to $82 billion in 1985. 1/ Of these purchases, equipment accounted for an average of 79 percent.

In July 1983, the Environmental Protection Agency (EPA) issued regulations governing effluent limits for electroplaters. These regulations require them to install waste-treatment equipment in factories in order to remove hazardous byproducts of their operations. The deadline for compliance with these effluent standards was set for mid-1984. These regulations generally impact precious jewelry producers because most precious jewelry is finished with a thin plating.

According to respondents of Commission questionnaries, capital expenditures were primarily for wastewater pretreatment purfication systems to meet EPA and State and local standards for wastewater discharge to be in compliance with the EPA regulations. Other expenditures were made on air pollution equipment, including dust and safety control, to meet Occupational Safety and Health Administration (OSHA), and other governmental standards for the workplace. Most other capital expenditures were reportedly made on equipment including computers, effluent water-settling tanks, exhaust systems, metal reclamation equipment for gold recovery, and sewer drainage systems.

10.5. Research and development

Fourteen firms provided usable data on U.S. producers' research and development (R&D) expenses and these data are presented in table 10-9.

Total R&D expenses increased 29 percent during 1982-86. Approximately one-half of all expenditures were related to the overall operations of the firm and increased at an annual rate of 6.9 percent. These expenditures reportedly included amounts spent to increase the cost efficiency of overall production, including automation of assembly operations, new tooling, and the application of computer technology in design and manufacturing. Of expenditures for precious jewelry, those related to precious-metal products accounted for the greatest value; however, those related to gemstone products showed the greatest increase. Expenditures related to precious-metal products rose at an annual rate of 5.5 percent over the period, whereas those related to gemstone products increased at an annual rate of 8.3 percent. The expenditures on precious-metal products reportedly included those spent on the development of designs, lighter weight products, and new metal alloys. Most

1/ 1987 Statistical Abstract of the United States.

Table 10-9
Research and development expenses by 14 U.S. producers of precious jewelry, 1982-86

Research and development expenses	1982	1983	1984	1985	1986	Percentage change, 1985 from 1982	Percentage change, 1986 from 1985	Average annual change, 1986 from 1982
	1,000 dollars							
Overall operations...	1,615	1,694	1,961	1,920	2,105	18.9	9.6	6.9
Precious jewelry:								
Of precious metal..	1,419	1,473	1,685	1,584	1,759	11.6	11.0	5.5
Of gemstones.....	451	526	541	596	621	32.2	4.2	8.3
Total.....	3,485	3,693	4,187	4,100	4,485	17.6	9.4	6.5
Ratio of research and development to net sales 1/..percent..	2.1	2.2	2.1	2.1	2.0	-	-	-

1/ The ratios were calculated using the net sales of the 14 respondents to Commission questionnaires to producers that provided usable data on research and development expenses.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

of the expenditures on gemstone jewelry were reportedly related to the development of new product designs.

R&D expenses averaged 2.1 percent of net sales for the 5-year period and were 2.0 percent in 1986. This compares with an industry composite for all miscellaneous manufacturing industries of 2.7 percent. 1/ Total R&D funded by all industries during 1982-86 increased by 28 percent. 2/ According to questionnaire responses, R&D expenses were reportedly related to the development of production technologies which would improve quality and reduce costs. Other such expenditures were on the development of new products, finishing techniques, in-house designs, materials testing, utility and water conservation, and sample production.

1/ Business Week, Jan. 23, 1986, p. 150.
2/ 1987 Statistical Abstract of the United States.

Chapter 11. The Competitive Outlook for the U.S. Industry

The U.S. industry producing precious jewelry is one of the largest in the world. During 1982-86, as economic conditions in various countries changed, imports of precious jewelry by most developed nations declined, but U.S. imports increased. Although Italy continues to be the dominant supplier of precious jewelry to world markets, and exports from most other developed nations have declined, developing nations are becoming significant exporters. Most developing nations' precious jewelry industries specialize production in one material or product, generally either gemstone-set articles or precious-metal chain. The bulk of Italian exports are in precious metals, primarily gold products. Exports from most other developed nations, except Japan, are mixed.

The expansion in the world trade in precious jewelry has increased competition among domestic producers for the declining U.S. market share, as well as international competition between domestic and foreign producers for foreign and third-country markets. Since precious jewelry products are functionally homogeneous, microeconomic trade theory holds that profit-seeking firms, after taking into account quality, design, fashion, and availability, will purchase products from the lowest cost supplier. However, since most of the value of precious jewelry is accounted for by materials that are internationally traded, a country's competitiveness will also be affected by the extent to which an industry relies on these internationally traded materials, the amount of local value-added, and other nonprice factors, such as quality and design. In addition, competitiveness will also be affected by relative exchange rates because they may significantly impact the price of finished goods in any market as well as change the relative price of internationally traded inputs. The manner in which all of these factors interact with the price of finished products ultimately determines the outlook for the U.S. industry in domestic and foreign markets.

As the United States recovered from an economic recession in the early part of the decade, disposable personal income increased at an annual rate of 7.1 percent from 1982-86. In general, during the period, total U.S. personal consumption expenditures, in nominal terms, grew at an annual rate of 7.7 percent compared with an annual growth in apparent U.S. consumption of precious jewelry of 9.7 percent. Growth of precious-metal consumption was 10.9 percent per year, whereas that of gemstone products reached 7.0 percent per year. Most of the growth in consumption occurred during 1982-85, as gold prices declined an overall 15 percent.

In 1986, when gold prices rose 16 percent, consumption of all precious jewelry increased by only 4 percent. Primarily owing to foreign cost advantages, and price-sensitive domestic consumers, U.S. imports significantly outgrew U.S. producers' shipments over the period. U.S. imports of precious-metal jewelry grew 21.8 percent per year compared with a 5.1-percent growth in U.S. shipments; imports of gemstone jewelry grew 36.5 percent per year compared with a 3.3-percent growth in U.S. shipments.

It appears as though the U.S. industry conceded some of the domestic market to imported products, primarily precious metals. In the chain segment of the market, there is some evidence of an increasing consumer preference for lower priced imported chain as shown by an increase in the import-penetration ratio from about 64 percent to about 69 percent over the period. With respect to gemstone products, an ironic picture develops. U.S. producers apparently

anticipated the growth in demand for products incorporating medium to large stones as they increased shipments through 1985. This production was labor intensive, but relied on highly skilled labor that was not generally available in low-wage rate countries. When, in 1986, the market demand switched to products with smaller stones with an even greater labor content, imports replaced domestic products in the market. Supporting this growth were the efforts of a number of raw material suppliers to upgrade their industries to producing finished products. Thailand is a prime example of a country shifting from a supplier of raw and cut gemstones to finished jewelry by refocusing workforce skills. This trend appears to be growing and, barring any unanticipated changes, may significantly affect the course of the domestic industry in the U.S. market.

The primary materials used in producing precious jewelry are gold and diamonds. Although each of these materials are internationally traded and priced in dollars, the supply of diamonds is controlled primarily by one distributor. Thus, only the price of gold is set by the market and its volatility significantly affects national trends in precious jewelry prices, production levels, and exports of those countries whose production is heavily concentrated in precious-metal products. The degree to which an industry depends on gold in production directly affects its competitiveness. For example, the Italian precious jewelry industry is the largest consumer of gold for jewelry in the world, and an estimated 99 percent of its exports are made of precious metals. As its exports statistics show, the relative success of the industry is inversely correlated with gold prices (see p. 7-7). However, as the U.S. industry is relatively less dependent on gold--an average of 62 percent of shipments are made of precious metals--gold price volatility has less of an impact. The relationship between an industry's dependence on gold as an input material and the significance of its precious-metal production appears to be crucial. As previously mentioned, the U.S. industry is less dependent on gold than the Italian industry. However, 70 percent of the U.S. market is accounted for by precious-metal products. The difference in this supply must therefore be met by imports, of which 88 percent are made of precious metal.

These trends and implications are not unique to the domestic market. The success of the U.S. industry in foreign markets depends on the composition of demand in those markets. Currently, 48 percent of U.S. exports are made of precious-metal products. The demand for such products in these markets will determine the U.S. industry's success as well as its likely chief competitors. If this demand is in machine-made precious-metal products, U.S. success seems limited primarily because of the dominance of Italian products. Conversely, if the demand is for high-labor-content gemstone products, the U.S. industry will face stiff competition from products of developing nations which have lower labor rates and often receive preferential duty treatment.

Domestically, evidence concerning the effect of these interactions on the industry indicates that U.S. producers must control rising production costs in order to remain competitive. According to questionnaire responses, domestically produced products were favored by a 3-to-2 margin in all factors, except price and product design. Domestic products were most heavily favored in marketing factors; however, overall perceived advantages were also significant. As responses to Commission questionnaires indicated, by a 2-to-1 margin, foreign-produced precious jewelry was generally lower priced. However, since raw materials are internationally traded, factors other than

raw materials contributed to this advantage. Foremost among these factors is the relatively lower cost of labor--an average of over two-thirds of questionnaire respondents indicated foreign producers held this advantage. The result of the U.S. industries' concession of part of the U.S. chain market to Italy appears to be some decline in employment of production workers throughout the U.S. industry. However, the productivity of the remaining workers increased significantly over the period and wages rose comparably. Foreign cost advantages apparently outweigh any nonprice competitive factors that most questionnaire respondents indicated favored the U.S. industry. For some countries, particularly Italy, lower costs may also result from a relatively higher capital-intensive type of production.

During the course of this study, U.S. retailers asserted that, in general, U.S. consumers are highly price sensitive with respect to precious jewelry because they purchase the "look" of the piece, rather than the value it contains. This is contradictory to what was reported in most foreign markets and partially explains why the bulk of the U.S. market is in relatively lower karatage items. This also requires U.S. producers to make a specific effort to produce products for export which are of the proper quality (within established tolerance limits) and market them aggressively according to value, an effort that heretofore has been less than universal.

Other potential problems affecting the international trade of jewelry arise out of the lack of universal product standards and terminology. Additional costs face exporters because of different national product standards and marking requirements. Although most markets require some type of marking, specific requirements are generally different. Therefore, unbiased enforcement of these regulations is critical to the successful penetration of a market; however, in practice, enforcement is reportedly subjective and often leads to alleged barriers to trade.

Appendix A

Request Letter from the Senate Committee on Finance

OFFICE OF THE CHAIRWOMAN
USITC
89 DEC 6 P3 : 31

BOB PACKWOOD, OREGON, CHAIRMAN

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United States Senate
COMMITTEE ON FINANCE
WASHINGTON, DC 20510

November 26, 1985

The Honorable Paula Stern
Chairwoman
U.S. International Trade Commission
701 E Street, N.W.
Washington, D.C. 20436

Dear Madam Chairwoman:

The Senate Committee on Finance requests that the United States International Trade Commission conduct an investigation under Section 332 of the Tariff Act of 1930 on the competitive position of imported jewelry in the U.S. market.

The Commission's investigation should consist of two consecutive reports which examine the conditions of competition that have affected both the costume jewelry and precious metal jewelry (including precious metal chain) segments of the U.S. jewelry industry. The first report should cover costume jewelry of base metals classified in the following TSUSA Items: 740.30, 740.34, 740.35, 740.38, 740.50, 740.60, 740.75, 740.80, and 745.6740. The second report should cover precious metal jewelry (including chain) classified in the following TSUSA Items: 740.11, 740.12, 740.13, 740.14, 740.15, 740.55, 740.66, 745.70, and 745.6720.

The Commission's reports in this investigation should include, to the extent possible, information with respect to the following:

- An analysis of the key economic factors in the U.S. market including U.S. production, trade, consumption inventories and other relevant factors.
- An analysis of the conditions of competition in the U.S. market between domestic and imported products including factors such as price, quality, design and marketing techniques.
- The levels and trends in employment of U.S. jewelry industry.

- Discuss U.S. and foreign government standards and regulations as to the country of origin and precious metal content marking of jewelry including customs procedures for enforcing such standards and regulations, as available.

The final report on costume jewelry should be transmitted to the Committee on Finance not later than ten months after receipt of this request and the report on precious metal jewelry (including chain) as soon as possible thereafter.

Sincerely,

BOB PACKWOOD

Appendix B

Notice of Institution of Investigation No. 332-222
in the Federal Register

[332-222]

Import Investigation; U.S. Jewelry Industry; Competitive Assessment

AGENCY: United States International Trade Commission.

ACTION: Institution of investigation.

SUMMARY: At the request of the Committee on Finance, United States Senate, the Commission has instituted investigation No. 332-222 under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), for the purpose of assessing the conditions of competition affecting U.S. producers of jewelry.

EFFECTIVE DATE: January 8, 1986.

FOR FURTHER INFORMATION CONTACT: Brian E. Garbecki (202-724-1731) or Mark Estes (202-724-0977), General Manufactures Division, U.S. International Trade Commission, Washington, D.C. 20436.

SUPPLEMENTAL: The Commission investigation will examine the U.S. jewelry industry, analyze key economic forces in the U.S. jewelry market and assess the factors of competition in the U.S. market between domestic and foreign products. There will be two consecutive reports issued. The first report will cover the costume jewelry segment of the U.S. industry and is to be transmitted to the Committee on Finance not later than October 6, 1986. The second report will cover the precious metal jewelry segment of the U.S. jewelry industry and is to be transmitted to the Committee on Finance not later than September 8, 1987.

The request specified that the Commission's reports should include, to the extent possible: (1) an analysis of the key economic factors in the U.S. market including U.S. production, trade, consumption inventories and other relevant factors; (2) an analysis of the conditions of competition in the U.S. market between domestic and imported products including factors such as price, quality, design and marketing techniques; (3) an analysis of the levels and trends in employment of U.S. jewelry industry; and (4) a discussion of U.S. and foreign government standards and regulations as to the country origin and precious metal content marking of jewelry including customs procedures for enforcing such standards and regulations, as available.

Written submissions: Interested persons are invited to submit written statements concerning the investigation. Written statements concerning the costume jewelry report should be received by May 9, 1986, and those concerning the precious metal jewelry report should be received by February 27, 1987. *Commercial or financial* information which a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of § 201.6 of the Commission's rules of practice and procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be made available for inspection by interested persons. All submissions should be addressed to the Secretary at the Commission's Office in Washington, D.C.

Hearing-impaired individuals are advised that information on this matter can be obtained by contacting our TDD terminal on (202) 724-0002.

Issued: January 15, 1986.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 86-1393 Filed 1-23-86; 8:45 am]

BILLING CODE 7020-02-M

[Investigations Nos. 731-TA-271 through 274 (Final)]

Import Investigation; Certain Welded Carbon Steel Pipes and Tubes From India, Taiwan, Turkey, and Yugoslavia

AGENCY: United States International Trade Commission.

ACTION: Institution of final antidumping investigations and scheduling of a hearing to be held in connection with the investigations.

SUMMARY: The Commission hereby gives notice of the institution of final antidumping investigations Nos. 731-TA-271 through 274 (Final) under section 735(b) of the Tariff Act of 1930 (19 U.S.C. 1673d(b)) to determine whether an industry in the United States is materially injured, or is threatened with material injury, or the establishment of an industry in the United States is materially retarded, by reason of imports of the following welded carbon steel pipes and tubes, which have been found by the Department of Commerce, in preliminary determinations, to be sold in the United States at less than fair value (LTFV):

Standard pipes and tubes [1] from India (inv. No. 731-TA-271 (Final));

Line pipes and tubes [2] from Taiwan (inv. No. 731-TA-272 (Final));

Standard and line pipes and tubes from Turkey (inv. No. 731-TA-273 (Final)); and

Standard pipes and tubes from Yugoslavia (inv. No. 731-TA-274 (Final)).

Unless the investigations are extended, Commerce will make its final LTFV determinations on or before March 10, 1986, and the Commission will make its final injury determinations by April 29, 1986, for the investigation concerning pipes and tubes from Taiwan; April 30, 1986, for the investigations concerning pipes and tubes from India and Yugoslavia; and May 5, 1986, for the investigation concerning the products from Turkey (see sections 735(a) and 735(b) of the act (19 U.S.C. 1673d(a) and 1673d(b))).

For further information concerning the conduct of these investigations, hearing procedures, and rules of general application, consult the Commission's rules of practice and procedure, part 207, subparts A and C (19 CFR part 207), and part 201, subparts A through E (19 CFR part 201).

EFFECTIVE DATES: The effective date for the investigation concerning pipes and tubes from Taiwan is December 30, 1985. The effective dates for the investigations concerning pipes and tubes from India and Yugoslavia is December 31, 1985, and the effective date for the investigation concerning the products from Turkey is January 3, 1986.

FOR FURTHER INFORMATION CONTACT: Abigail Eltzroth (202-523-0369), Office of Investigations, U.S. International Trade Commission, 701 E Street NW., Washington, DC 20436. Hearing-impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on 202-724-0002. Information may also be obtained via electronic mail by accessing the Office of Investigations' remote bulletin board system for personal computers at 202-523-0103.

SUPPLEMENTARY INFORMATION:

Background.—These investigations are being instituted as a result of affirmative preliminary determinations by the Department of Commerce that

[1] For purposes of these investigations, the term "standard pipes and tubes" covers welded carbon steel pipes and tubes of circular cross section, 0.375 inch or more but not over 16 inches in outside diameter, provided for in items 610.3231, 610.3234, 610.3241, 610.3242, 610.3243, 610.3252, 610.3254, 610.3256, 610.3258, and 610.4925 of the Tariff Schedules of the United States Annotated (TSUSA).

[2] For purposes of these investigations, the term "line pipes and tubes" covers welded carbon steel pipes and tubes of circular cross section, with walls not thinner than 0.065 inch, 0.375 inch or more but not over 16 inches in outside diameter, conforming to API specifications for line pipe, provided for in items 610.3258 and 610.3259 of the TSUSA.

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Appendix C

Survey Design and Methodology

Because of the limited and incomplete nature of available data on the U.S. precious jewelry industry, the Commission found it necessary to employ statistical sampling techniques in order to obtain information requested by the Senate Finance Committee. Questionnaires were developed to generate statistical data on product mix and production materials and sent to representative U.S. producers, importers, and purchasers of precious jewelry. Information was received, verified, and processed such that determining the identification of an individual firm would not be possible in the public report. A complete explanation of the survey design and methodology follows.

The following tabulation shows the estimated total firms (based on the most currently available data), the number of firms surveyed, the expected response rate, and the actual response rate:

	Producers	Importers	Purchasers
Estimated total firms.....	1,417	6,017	131
Number to be surveyed.....	120	200	30
Expected response rate.....	90	80	90
Actual response rate.....	72	81	90

The universe of producers was derived from the membership list of the Manufacturing Jewelers and Silversmiths of America (MJSA), augmented with other known jewelry manufacturers obtained from this association's prospective membership file. The universe for the importers' questionnaire was derived from the U.S. Customs Service Net Import File for the TSUS items covered by the Commission's investigation, covering the period October 1984-September 1985. The purchasers' universe in turn was obtained by combining ACCENT (January 1986 issue) magazine's list of "Jewelry's Top 100 Retailers" of jewelry and watches, with the list of top purchasers compiled by the MJSA. Stratified random sampling was employed to ensure that the sample was representative of the universe and to minimize overall respondent burden, especially on the smaller firms within the industry.

Respondents for the producers', importers', and purchasers' questionnaires were selected by a stratified random sample based upon the level of employment, customs value of imports, and sales (or purchase) revenue from jewelry and watches, respectively. The number and placement of strata were determined to minimize variance within strata, using the cum-square root frequency technique. A random sample was drawn from each stratum, permitting statistical projection to the universe. Sample sizes were chosen to ensure an accuracy of estimation of totals to within approximately $\pm$ 10 percent at the 95-percent confidence level.

Strata, basis of stratification, strata size, and number of firms to be sampled within each stratum are summarized below:

Producers

Stratum (No. of employees)	Stratum size	No. to be surveyed
1800 to 110	86	60
100 to 56	164	20
55 to 1	1,167	40
Total	1,417	120

Importers

Stratum ($1,000)	Stratum size	No. to be surveyed
58,001.7 to 2,349.3	129	116
2,315.4 to 580.4	206	13
578.0 to 0.3	5,682	71
Total	6,017	200

Purchasers

Stratum ($1,000,000)	Stratum size	No. to be surveyed
1/	31	10
508.0 to 131.0	13	13
114.0 to 30.6	17	3
29.5 to 9.5	70	4
Total	131	30

1/ Largest purchasers reported by the MJSA; excluding those already contained in the ACCENT magazine top 100.

The Commission surveyed a stratified sample of the entire relevant universe of producers and importers. However, results for purchasers will be representative only of the larger firms in the industry because of the method of selecting purchasers for the sample (see p. C-2). The questionnaire responses were reviewed by Commission staff for accuracy. Since some responses were either not usable, or inapplicable, and because of incomplete information on the actual composition of producer and importer groups, our effective sample size was smaller than expected. No adjustments were made to account for the discrepancy between actual and expected response rates because response rates were not substantially different across strata. The following tabulation presents the usable response rate by type of questionnaire:

	Producers	Importers	Purchasers
Applicable questionnaires..	87	149	30
Questionnaires with usable information.....	63	120	27
Usable response rate 1/ percent..	72	81	90

1/ Usable response rate is defined as the number of questionnaires returned with usable information as a percent of total applicable questionnaires.

Data collected in the financial sections of the questionnaire were also sufficient to project industry totals within acceptable confidence intervals. Other data were collected in the remaining sections of the questionnaires and found to be insufficient to project industry totals within acceptable confidence intervals. They were, however, judged to be illustrative of trends within the industry because responses covered a sufficiently large percentage of the total.

Responses were sufficient to estimate aggregate industry data for U.S. producers' shipments of precious jewelry by material of chief value. Our estimates are as follows:

Year	Product	Estimated value (1,000 dollars)
1982.....	Precious metal	1,771,748
	Other materials	1,155,080
1983.....	Precious metal	1,922,389
	Other materials	1,238,999
1984.....	Precious metal	2,218,506
	Other materials	1,236,429
1985.....	Precious metal	2,111,598
	Other materials	1,370,799
1986.....	Precious metal	2,160,414
	Other materials	1,315,476

Appendix D

Impact of Input Materials on Jewelry Manufacturing

Over the last 10 years, the worldwide development of the jewelry industry has become increasingly interrelated with market factors which, prior to that, were not as important. Since raw materials account for approximately two-thirds of the total cost of precious jewelry, it follows that any changes that affect the cost of these materials similarly affect the jewelry industry. The most obvious changes have occurred in the worldwide market for gold. As figures D-1 and D-2 show, monthly changes in the price of platinum and karat gold jewelry during 1978-81 closely followed the changes in the dollar price of gold. However, as jewelry manufacturers adjusted their operations to account for higher and more volatile gold prices during 1982-86, producer prices for karat gold and platinum jewelry were less dependent. The following section discusses the development of the relationship between major raw material industries and precious jewelry, and the implications on manufacturing.

D.1. Precious metals

Precious metal is the major material used in the production of precious jewelry. Virtually every piece contains, to some degree, an amount of precious metal, usually gold. On average, industry sources estimate that precious metal accounts for between 70 and 80 percent of the total value of a finished precious-metal article. Of all the metals that are considered precious, gold, silver, and to a lesser degree, platinum are the primary metals used. Gold has become the most popular because of its color, malleability, tarnish resistant quality, and relative rarity. Since gold accounts for the bulk of precious metals used in jewelry manufacturing, this section will concentrate on the relationship between the gold and finished-jewelry industries.

Economic relationship.--The world supply of, and demand for, gold depends on a variety of economic and noneconomic factors. On the supply side, economic factors that affect the industry include production levels, stockpiles, and sales of gold by nonmarket economies (NME's); South African production levels, sales, costs of production, and their foreign exchange and payment situation; and mine production and sales by other countries. On the demand side, macroeconomic factors affecting the gold market include relative gross national products, inflation, interest rates, unemployment, exchange rates, and Government policies. Noneconomic factors affecting the industry include the general political climate worldwide and specific conditions in major supplying and consuming nations.

Supply.--The principal sources of gold are new mine production and scrap recovery. According to Consolidated Gold Fields (CGF), new mine production in the market economies accounted for an average of almost 90 percent of total gold supplied to the private sector during 1982-86 (table D-1). Trade with NME's was substantial in all but 1983, and official transactions 1/ also affected the supply of new gold to the private sector. The official sector was a net purchaser of gold through 1982, a net seller of gold in 1983-84, and a net purchaser again in 1985-86. CGF attributed the net selling period to the debt crisis in many developing countries. By reducing

1/ Official transactions include those made by central banks and Government-controlled investment institutions.

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Figure D-1
Precious-metal jewelry and gold: Average monthly market and producer prices, indexed, 1978-81

January 1982=100

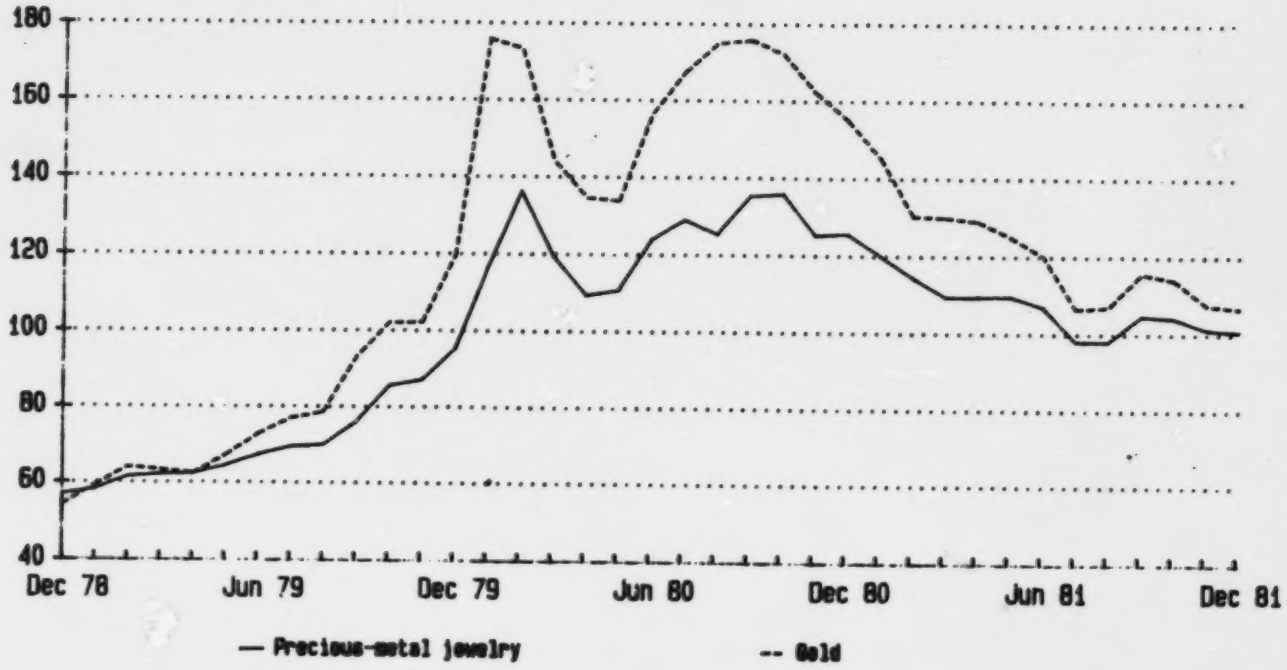


Figure D-2
Precious-metal jewelry and gold: Average monthly market and producer prices, indexed, 1982-86

January 1982=100

Table D-1
New gold supply to the market economy private sector, 1982-86

(Metric tons)

Year	Market economy country mine production	Net trade with nonmarket economies	Net official sales or purchases (-)	Total new gold supply
1982...	1,028	203	-85	1,146
1983...	1,115	93	142	1,350
1984...	1,160	205	85	1,450
1985...	1,233	210	-135	1,308
1986...	1,281	402	-181	1,502

Source: Gold 1987, Consolidated Gold Fields.

their reserves, these countries were able to raise funds and service their debt while rescheduling that part of the debt that they could not meet. Although this problem is not resolved, CGF reported that many countries began rebuilding reserves in 1985.

According to the latest available data of the U.S. Bureau of Mines, the largest producer of gold in the world in 1985, accounting for 45 percent of the total production, was South Africa. As table D-2 illustrates, no other country was even close to the amount of gold produced in South Africa. The distant second and third leading producers were the U.S.S.R. and Canada, accounting for 18 percent and 6 percent of total world production, respectively. The United States was the fourth largest producer, just behind Canada.

Table D-2
World gold mine production, by country, 1981-85

Country	1981	1982	1983	1984	1985	Share of total 1985	Change, 1985 from 1981
	(1,000 troy ounces)					Percent	
South Africa.....	21,121	21,355	21,847	21,907	21,566	44.7	2.1
U.S.S.R.....	8,425	8,550	8,600	8,650	8,700	18.0	3.3
Canada.....	1,673	2,081	2,363	2,638	2,747	5.7	64.2
United States.....	1,379	1,466	2,003	2,085	2,475	5.1	79.5
Brazil.....	1,200	1,500	1,750	1,750	2,000	4.2	66.7
China.....	1,700	1,800	1,850	1,900	1,950	4.0	14.7
Australia.....	591	867	984	1,257	1,833	3.8	210.2
Philippines.....	758	834	817	787	810	1.7	6.9
Chile.....	400	543	571	541	554	1.2	38.5
Zimbabwe.....	371	426	453	478	480	1.0	29.4
All Other.....	3,633	3,705	3,758	4,415	5,102	10.6	40.4
Total.....	41,251	43,127	44,996	46,408	48,217	100.0	16.9

Source: Bureau of Mines Mineral Yearbook, 1985, U.S. Department of the Interior.

Secondary sources of gold include old scrap and process scrap. Old scrap includes gold recovered from jewelry and other industrial products that have been produced, used, and discarded. Process scrap is that which is residual from the normal manufacturing process. These two types of scrap are differentiated because process scrap does not add to the net new supply of gold available. The supply of old scrap is reportedly dependent on a combination of factors, including national economic conditions, the price of gold, and social or cultural traditions. The most important factor that influences the amount of old scrap recovered is the price of gold. A high local price of gold entices the public to sell back old items, whereas a low price suggests a holding position hoping for a price increase in the future.

Local relative exchange rates versus the dollar also add an incentive to sell back old scrap because it translates the dollar denominated price of gold into a local currency price. In addition, a healthy economy generates greater purchasing power for finished goods and less old gold scrap, whereas an economy that is sluggish will generate funds through a large amount of old scrap being refined. Jewelry products are reportedly the largest source of old scrap as consumers trade in old items for new, or to reap a profit. Table D-3 illustrates the relationship between changing gold prices and the supply of gold.

The trend in old scrap recovery followed the pattern of the gold price during 1982-84. However, in 1985, as economic and political problems and deteriorating exchange rates in many Middle Eastern countries drove local gold prices higher, old scrap recovery increased regardless of the price decrease. As the price of gold recovered in 1986, old scrap recovery in most countries increased (table D-4).

CGF reported that the bulk of the selling in 1986 was the result of major traders taking advantage of the relatively high price and selling part of their stocks to generate profits and reduce their level of debt. Further, the dominance of Middle Eastern countries is partly explained by their tradition of trading in old items. Therefore, the increase in scrap recovery in most Middle Eastern countries in 1986 resulted from, in part, rising gold prices, reduced liquidity as a result of lower oil prices, and tradition.

Major U.S. suppliers of gold are listed in table D-5. The value of U.S. imports of gold during 1982-86 more than tripled from 4.7 million troy ounces in 1982 to 15.7 million troy ounces in 1986. Canada, the leading U.S. supplier in 1986, accounted for 6.6 million troy ounces, or 42 percent of total imports. Switzerland and the United Kingdom followed as the second and third leading suppliers, accounting for 3.8 million troy ounces and 1.1 million troy ounces, respectively. It should be noted that the country of origin of gold is very difficult to determine and, although the countries listed were the major U.S. suppliers, they are not necessarily major producing nations, rather major trading or refining nations.

Demand.--As previously mentioned, demand for gold stems from three general sectors: industrial consumption, speculative investment, and official transactions. Major industrial consumers include the jewelry and electronics industries. Investor demand stems from the relationship between the value of gold and paper assets such as stocks, bonds, and currencies. Offical transactions stem from most governments use of gold for official reserves or coinage.

Table D-3
Gold: Relationship between the price of gold and the componentsof total supply, 1982-86

Year	Average annual price of gold 1/	New gold supply	Net old scrap recovery	Total gold supply	Ratio of old scrap to total
	U.S. dollars	Metric tons			Percent
1982...	375.91	1,146	237	1,383	17
1983...	424.00	1,350	289	1,639	18
1984...	360.66	1,450	284	1,734	16
1985...	317.66	1,308	299	1,607	19
1986...	368.24	1,502	465	1,967	24
			Index 1982=100		
1982...	100.0	100.0	100.0	100.0	100.0
1983...	112.8	117.8	122.0	118.5	105.9
1984...	96.0	126.5	119.9	125.4	94.2
1985...	84.5	114.1	126.2	116.2	111.8
1986...	98.0	131.1	196.2	142.2	141.2

1/ Englehand Industries quotations.

Source: Gold 1987, Consolidated Gold Fields, except as noted.

Table D-4
Supply of scrap, 1982-86

Country	1982	1983	1984	1985	1986	Share of total 1982	Share of total 1986	Change, 1986 from 1982
Saudi Arabia and Yemen....	8	20	10	19	99	3.4	21.3	1,137.5
India.....	48	51	50	50	58	20.3	12.5	20.8
Turkey.....	23	0	33	40	40	9.7	8.6	73.9
United States.....	44	40	38	38	40	18.6	8.6	-9.1
Indonesia.....	5	31	5	5	40	2.1	8.6	700.0
Egypt.....	7	6	6	22	32	3.0	6.9	357.1
Iran.....	0	0	0	0	24	0	5.2	-
Kuwait.....	2	2	2	3	14	.8	3.0	600.0
Iraq, Syria, and Jordan...	0	2	5	15	13	0	2.8	-
Italy.....	10	10	13	15	8	4.2	1.7	-20.0
All other.....	90	127	122	92	97	38.0	20.9	7.8
Total.....	237	289	284	299	465	100.0	100.0	96.2

Source: Gold 1987, Consolidated Gold Fields.

Table D-5
Gold, excluding gold leaf: U.S. imports for consumption, by principal sources, 1982-86

Source	1982	1983	1984	1985	1986
	Quantity (1,000 troy ounces)				
Canada	2,972	2,241	4,153	4,830	6,593
Switzerland	286	337	347	348	3,844
United Kingdom	53	34	636	412	1,090
Belgium	11	118	42	182	1,005
Uruguay	398	606	946	1,080	762
Soviet Union	12	4	4	5	454
West Germany	17	15	22	33	301
Dominican Republic	142	245	400	356	297
Brazil	120	1	140	135	246
Chile	128	185	269	237	232
All other	608	572	743	575	908
Total	4,746	4,358	7,702	8,194	15,732
	Value (1,000 dollars)				
Canada	1,114,403	971,636	1,546,780	1,552,100	2,440,034
Switzerland	115,532	147,718	131,198	112,537	1,343,126
United Kingdom	18,881	14,158	232,954	131,649	383,695
Belgium	4,554	53,844	16,185	56,814	342,004
Uruguay	168,928	266,979	397,488	407,608	328,349
Soviet Union	4,081	1,690	1,561	1,773	155,049
West Germany	5,968	7,994	8,675	10,381	107,011
Dominican Republic	52,208	103,947	146,131	113,490	105,763
Brazil	50,512	536	47,742	44,309	89,422
Chile	45,731	81,413	91,663	76,975	82,899
All other	244,772	234,102	259,916	177,216	305,046
Total	1,825,570	1,884,018	2,880,295	2,685,852	5,682,398
	(Unit value per troy ounce)				
Canada	$374.97	$433.57	$372.45	$321.55	$370.09
Switzerland	403.98	438.33	378.09	323.38	349.41
United Kingdom	356.24	416.40	366.28	319.54	352.01
Belgium	414.00	456.30	385.36	312.16	340.30
Uruguay	424.44	440.56	420.18	377.42	430.90
Soviet Union	340.07	422.61	390.22	354.51	341.52
West Germany	351.06	532.94	394.33	314.57	355.52
Dominican Republic	367.66	424.27	365.33	318.79	356.11
Brazil	420.93	536.25	341.01	328.21	363.51
Chile	357.27	440.07	340.75	324.79	357.32
All other	402.59	409.27	349.82	308.20	335.95
Average	384.65	432.31	373.97	327.78	361.20

Source: Compiled from official statistics of the U.S. Department of Commerce.

As shown in table D-6, CGF estimates that gold used in jewelry accounted for an average of 71 percent of worldwide gold used in industrial production during 1982-86. Although the amount of gold used in jewelry

Table D-6
Gross gold used in industrial production, 1982-86

Use	1982	1983	1984	1985	1986	Share of total 1986	Change, 1986 from 1982
	Metric tons					Percent	
Jewelry:							
Developed countries	456	419	474	535	548	32.8	20.2
Developing countries	436	392	578	592	549	33.0	25.9
Total jewelry	892	811	1,052	1,126	1,097	65.8	23.0
(Jewelry percent of total)	(71)	(67)	(72)	(77)	(66)		
Official coins	131	165	131	105	327	19.6	149.6
Other industrial	58	53	56	54	57	3.4	-1.7
Electronics	89	107	131	115	124	7.4	39.3
Dentistry	61	51	52	53	51	3.1	-16.4
Medals and coins	22	32	44	14	12	.1	-45.4
Total	1,252	1,218	1,464	1,467	1,666	100.0	33.1
New gold used in jewelry production	732	630	855	892	828	-	13.1
Ratio of new gold to total used in jewelry	82	78	81	79	75	-	-

Note.--Due to rounding, figures may not add to the totals shown.

Source: Gold 1987, Consolidated Gold Fields.

increased by 23 percent during the period, gold used in all other industrial applications increased by 58 percent, largely the result of gold being used in official coinage. The reduction in the amount of gold used in industry in 1983 and 1986 reflect the rising price of gold which dampened worldwide consumer demand for jewelry products. The increase in the use of gold in other industrial applications was the direct result of a large increase in gold used for official coinage in Japan in 1986. Although the dollar price of gold increased, the weakening of the dollar vis-a-vis other currencies improved economic prosperity in major foreign markets and contributed to an increase in gold jewelry production in those markets that support domestic demand. However, the falling dollar significantly affected exports of gold jewelry from major producing nations that are heavily dependent on exports (primarily Italy). In the United States, as imports from those nations rose to a lesser degree, domestic manufacturers faced with higher gold prices continued to lose market share. Developing countries became the largest consumers of gold for jewelry in 1984. Although the amount of gold consumed

for jewelry in developed countries rose by 20 percent during 1982-86, that consumed in developing countries rose by 26 percent. Consumption of gold for jewelry in developing countries decreased significantly in 1986 largely as a result of increasing gold prices and falling currency values which are linked to the dollar, compounding the price increases.

The largest fabricator of gold into jewelry in 1986, according to CGF, continued to be Italy, as their production and exports closely followed trends in gold prices (table D-7). Italy's consumption of gold for use in jewelry dropped 21 percent during 1982-83, then rose 46 percent through 1985, before falling back 6 percent to 222 metric tons, accounting for one-fifth of the total gold used in jewelry in the world. India became the second largest user in 1982 and has retained that position through 1986, in which, Indian consumption accounted for an estimated 146 metric tons, or 13 percent of the total. The United States was the third largest user during the period and in 1986 consumed 93 metric tons, or 8 percent, of the world total.

Table D-7
Gross gold usage in jewelry, including scrap recovery, 1982-86

Country	1982	1983	1984	1985	1986	Share of total 1986	Change, 1986 from 1982
	Metric tons					Percent	
Italy	205	162	205	237	222	20.2	8.3
India	108	104	145	173	146	13.3	35.2
United States	72	80	84	89	93	8.5	29.2
Turkey	11	17	37	75	84	7.7	663.6
Japan	43	43	50	61	81	7.4	88.4
Saudi Arabia and Yemen	26	32	32	44	44	4.0	69.2
West Germany	33	33	33	34	35	3.2	6.1
Indonesia	28	21	50	40	28	2.5	0
Egypt	37	39	52	30	27	2.5	-27.0
Pakistan and Afghanistan	13	11	18	18	25	2.3	92.3
All other	316	269	346	325	312	28.4	-1.3
Total 1/	892	811	1,052	1,126	1,097	100.0	23.0

1/ Due to rounding, figures may not add to the totals shown.

Source: Gold 1987, Consolidated Gold Fields, except as noted.

According to the latest available data of the U.S. Bureau of Mines, over 50 percent of gold consumed in the United States is for jewelry and the arts (table D-8). Of that, 86 percent is karat gold.

Gold prices.--Gold has traditionally been used by governments as the primary reserve asset. It continued to play a vital role in the operation of the international monetary system from World War II until 1971. This period was known as that of the "gold exchange standard" because countries were willing to hold their international reserves in foreign currencies (primarily U.S. dollars) that were convertible to gold. The U.S. Government was prepared to exchange gold with foreign central banks at a fixed price of $35 per

Table D-8
U.S. consumption of gold 1/, by end use, 1981-85

	1981	1982 2/	1983 2/	1984 2/	1985 2/	Share of total 1981	Share of total 1985	Change, 1985 from 1981
	1,000 troy ounces					Percent		
Jewelry and the arts:								
Karat gold.....	1,420	1,638	1,410	1,466	1,418	43.3	45.7	-.1
Fine gold for electroplating...	24	17	18	18	27	.7	.9	12.5
Gold-filled and other.....	286	301	237	225	198	8.7	6.4	-30.8
Total jewelry ...	1,730	1,956	1,665	1,709	1,643	52.8	53.0	-5.0
Dental.....	314	358	360	363	394	9.6	12.7	25.5
Industrial uses:								
Karat gold.....	50	64	44	42	36	1.5	1.2	-28.0
Fine gold for electroplating...	528	389	344	415	326	16.1	10.5	-38.3
Gold-filled and other.....	633	649	644	628	693	19.3	22.4	9.5
Total industrial.....	1,525	1,460	1,392	1,448	1,449	46.5	46.8	-5.0
Small items for investment 3/.....	22	9	3	8	7	.7	.2	-68.2
Total	3,276	3,423	3,060	3,164	3,100	100.0	100.0	-5.4

1/ Gold consumed in fabricated products only, does not include monetary bullion.
2/ Data may include estimates.
3/ Fabricated bars, medallions, coins, etc.

Note.--Due to rounding, figures may not add to the totals shown.

Source: Bureau of Mines Mineral Yearbook, 1985, U.S. Department of the Interior.

ounce. Foreign governments were confident that the dollar would retain its value in terms of other currencies and remain convertible to gold. While dollar reserves kept growing, the amount of U.S. gold reserves for monetary purposes began to shrink in 1959. The declining leverage of the gold exchange standard, combined with a growing U.S. deficit and increasing quantity of dollars in official reserves, eventually eroded the confidence of foreign dollar holders. As the price of gold was fixed, and it's production costs increased, the supply of new gold did not expand sufficiently to meet the growing demand by the private sector. Simultaneously, dollar investors who became concerned about maintaining the value of their wealth depleted dollar holdings and bought gold as a speculative asset.

As a result of these pressures on the gold exchange standard, central banks in 1968 agreed to stop selling gold to private organizations; however, they agreed to continue trading it among themselves at $35 per ounce. This decision effectively severed the private market for gold from the official

market, and began what was known as the two-tier pricing system. The private market price for gold became free to follow market supply and demand pressures, whereas the official price remained at $35 per ounce. The dollar's gold parity became somewhat artificial.

The price of gold was set on this two-tier system until 1971 when the U.S. Government discontinued the sale of gold completely. This action cut the remaining link between the U.S. dollar and gold, forcing foreign governments to determine the value of their currency against the dollar in a free-float exchange system.

The next major step occurred in 1975 when the U.S. Government began to allow gold trading by individuals again. When the gold market opened again, a futures market trading in the commodity was formed. The reopening of the spot market and development of a futures market allowed a greater number of participants in the market and was the start of a close relationship between the gold and jewelry industries.

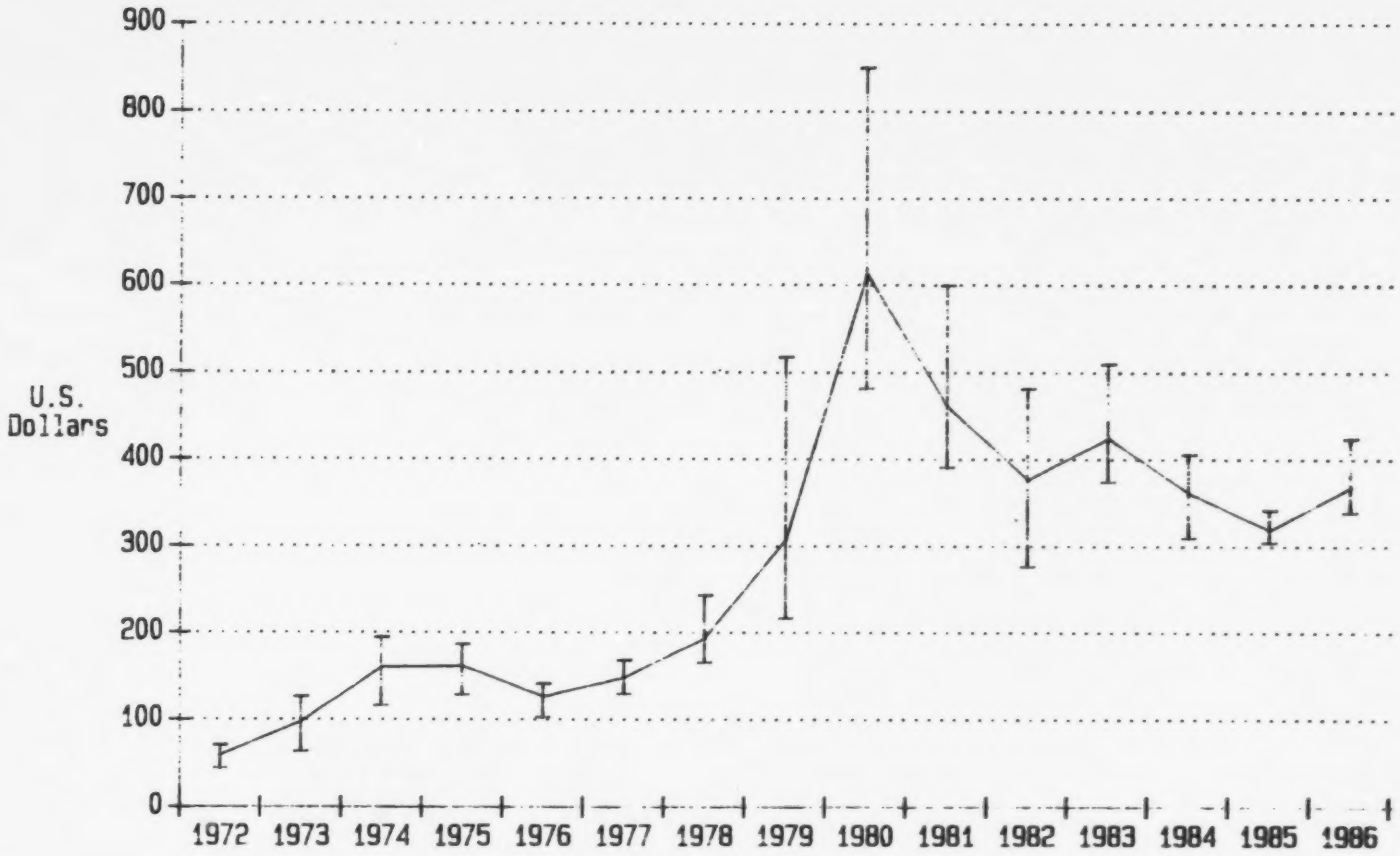
Jewelry manufacturers apparently did not fully appreciate the pitfalls of this relationship until 1980. From 1976 to 1980, as figure D-3 shows, the price of gold steadily rose to an average annual peak of approximately $600 in 1980. During this period, manufacturers were capturing windfall profits from gold price increases. The rising price of gold in turn increased the value of their holdings in inventory and work in progress. However, when the price of gold began to decline in 1980, manufacturers realized they could lose money as easily as they could gain it and recognized the need to hedge against this loss.

Effects on jewelry manufacturers.--The price of gold affects jewelry manufacturers in two ways: the price level affects the amount of gold used in production and the volatility in the price affects the planning operations of the firm. Since gold is the largest cost component of most precious jewelry, a high price for raw gold translates into high retail prices for finished articles. Assuming prices for competing products remain the same, higher relative prices for jewelry would lead to a decline in demand. In order for manufacturers to keep prices at a relatively reasonable level, their only alternative is to reduce the gold content.

For example, when the price of gold is high, consumers cannot afford heavy pieces and manufacturers must switch production from heavy styles to those which are lighter in weight, such as hollow goods or filigree styles. In addition, karatage is reduced or the use of substitute materials such as gold filled, increases. The production of hollow goods has become increasingly important in Italy, where production levels are heavily dependent on gold prices. A volatile gold price level also leads to extreme fluctuations in the value of inventory holdings (raw materials and finished products), production levels, and corporate asset values. By taking advantage of financing methods created during the early 1980's, manufacturers also found they could reduce the impact of gold price volatility on the operations.

Since the linkage between gold and the dollar was severed in 1971, jewelry manufacturers have had to contend with fluctuating prices. The combined affect of a fluctuating and volatile gold price has precipitated changes in the way they operate. In the face of these problems, manufacturers turned to precious metal dealers, and other major users, for assistance in

Figure D-3
Gold: Average annual price within an annual hi-lo band, 1972-86



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reducing the risk associated with fluctuating gold values. Manufacturers themselves have had to adjust their methods of buying, holding, and using gold in their operations. In addition to the changes in the economics of manufacturing precious jewelry, changes in the gold market have also caused changes in the relationship between gold suppliers, manufacturers, retailers, and consumers.

For the manufacturer, the problem with using gold as an input material is not so much high price, but the volatility in the price. The impact of gold price swings during the late 1970's and early 1980's created uncertainties for the industrial user. Price swings inhibited jewelry purchases by consumers and retailers, which, in turn, affected sales forecasting and production planning at the manufacturing level. The value of inventory holdings fluctuated, and manufacturers that wanted to protect themselves from the price fluctuations by hedging on the futures market faced rising interest costs. One attempt by manufacturers to meet the problem was to reduce the weight of gold in jewelry items and maintain price points. In some cases, manufacturers turned to using substitute materials in order to reduce gold content. The burden of these methods of trying to hold costs down falls on the manufacturer.

There are a variety of different methods jewelry manufacturers use to buy gold. The underlying objective of each is to eliminate or reduce the risk of owning the precious metal in a fluctuating market and to reduce financing costs. The first is the traditional purchase with payment on the spot. The second is through a forward purchase where the price is set on the spot for delivery of metal on a future date. The third is through using "options" to buy gold only when the price drops below a preset limit, usually the spot price on the date of the contract. The fourth is to obtain advances of gold against expected future scrap. The last method encompasses a variety of different ways to obtain gold with a delayed price settlement; i.e., leaving the price open until the date of shipment; borrowing the metal and paying for it on the date of shipment of the finished product with the borrower assuming tax liability; and using consignment arrangements, where an advance of the physical metal is obtained but title remains with the lender.

By using any of the forward/future-type arrangements, a fixed price for gold is set in a contract for the product over time. A manufacturer can cover any open position by staggering a series of contracts with the market to buy or sell on scheduled dates. In any other method, the price is variable. Under the lend/lease-type programs, obligations are usually denominated in ounces with the objective being to match the price paid for raw metal with the price charged for the gold content of the finished product. The cost of these programs range from 3 percent to 8 percent of the total outstanding balance at spot prices. If borrowed money was used to buy the gold outright, the total cost is usually less than the prevailing interest rate. All of these purchasing methods can significantly affect the inventory levels of a company and the tax position of both the lender and manufacturer.

D.2. Gemstones 1/

Gemstones include certain natural, cut (excluding industrial diamonds), and synthetic stones, and possess, to a greater or lesser degree, one or more

1/ The bulk of the information in this section was obtained from various reports by the Bureau of Mines, U.S. Department of Interior.

of the following characteristics; rarity, beauty (at least in their cut or polished form), and durability. They are the raw materials of the lapidary, or gem-cutting industry, and are primarily used for decorative purposes in jewelry, art objects, and for exhibits in collections. Low-quality gem stones may also be used in certain industrial applications such as electrical or electronic equipment. Although there are almost 150 varieties of gem-quality stones in existence, diamonds are most commonly used in jewelry (table D-9). The two grades of diamonds used in jewelry are commercial and investment. Commercial-grade diamonds are small and are most often used in mass-merchandised jewelry. Investment-grade diamonds are generally one carat or more and are used in most fashion-oriented, high-priced pieces. Gem-cutting is a labor-intensive operation that has existed for thousands of years, and represents a substantial part of the value of finished gemstones.

Synthetic gemstones consist of manmade materials that have the same chemical composition and physical and optical properties as their natural counterparts. These synthetic compositions appear identical to the corresponding natural minerals and are principally used in medium-to-low-priced precious jewelry and costume jewelry.

Principal diamond-trading centers in the world are Antwerp, Bombay, Tel Aviv, and New York. Antwerp is primarily an exchange point for stones of all nations. Cutting centers have developed in other major trading areas with each specializing in a certain type of diamond. In Bombay, India, the largest volume of diamonds by weight is cut and traded, primarily in small stones averaging less than 20 points each (100 points equals one carat). Tel Aviv concentrates on medium quality stones and has recently made attempts to cut and export larger and better quality stones. New York is the primary cutting center for large stones of the highest quality. Cutting and polishing of colored gemstones is centered in Thailand, India, Hong Kong, and Brazil, where low-cost labor is abundant. Since diamonds account for the bulk of gemstones used in jewelry, the following section discusses the relationship between the diamond and finished jewelry industries.

Industry structure.--The world market for diamonds is controlled by DeBeers Consolidated Mines Ltd. It is the most strictly controlled commodity market in the world. DeBeers, through its Central Selling Organization (CSO), markets 80 to 85 percent of the world's supply of rough diamonds. The CSO serves as middleman between diamond producers and dealers, and is an organization for the marketing and pricing of rough diamonds produced by many of the major producing countries. It buys rough or uncut diamonds from DeBeers Mines and from other diamond-producing countries through negotiated purchasing pacts, regardless of the state of the market. The diamond rough is held in a stockpile, and from there it is released to the cutting trade. In doing so, they attempt to match supply with demand and avoid any sharp fluctuations in price. The CSO fixes the price, quantity, and quality of stones that reach global markets; however, they only trade in diamond roughs, most of which will eventually be cut into polished gems and retailed in jewelry. The CSO does not control the diamond trade in the United States because antitrust laws prohibit its operation.

The CSO also markets diamonds, both gem and industrial, worldwide. In doing so, they can stimulate the demand for cut stones and uncut roughs. Since the early 1980's, the DeBeers group reportedly has increased spending on advertising and promotion threefold, to approximately $100 million in 1985.

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Table D-9.--Guide to selected gemstones and gem materials used in jewelry

Name	Composition	Color	Faceted size[1]	Cost[2]	Mohs' hardness	Specific gravity	Refraction	Refractive index	May be confused with—	Recognition characters
Amber	Hydrocarbon	Yellow, red, green, blue.	Any	Low to medium	2.0-2.5	1.0-1.1	Single	1.54	Synthetic or pressed, plastics.	Fossil resin, soft.
Beryl:										
Aquamarine	Beryllium aluminum silicate.	Blue-green to light blue.	do	Medium to high	7.5-8.0	2.63-2.80	Double	1.58	Synthetic spinel, blue topaz.	Double refraction, refractive index.
Emerald	do	Green	Medium	Very high	7.5	2.63-2.80	do	1.58	Faceted emerald, glass, tourmaline, peridot, green garnet, doublets.	Emerald filter, dichroism, refractive index.
Emerald, synthetic	do	do	Small	High	7.5-8.0	2.63-2.80	do	1.58	Genuine emerald	Flaws, brilliant, fluorescence in ultraviolet light.
Goshenite	do	Yellow to golden	Any	Low to medium	7.5-8.0	2.63-2.80	do	1.58	Citrine, topaz, glass, doublets.	Refractive index, double refraction.
Morganite	do	Pink to rose	do	Low to medium	7.5-8.0	2.63-2.80	do	1.58	Kunzite, tourmaline, pink sapphire.	Refractive index.
Calcite:										
Marble	Calcium carbonate	White, pink, red, blue, green, brown	Any	Low	3.0	2.72	Double (strong).	1.49-1.66	Siliceous, banded agate, alabaster gypsum.	Translucent.
Mexican onyx	do	do	do	do	3.0	2.72	do	1.5	do	Banded, translucent.
Chrysoberyl:										
Alexandrite	Beryllium aluminate	Green by day, red by artificial light.	U.S.S.R. (small), Sri Lanka (medium).	High	8.5	3.69-3.84	Double	1.75	Synthetic	Distortion, inclusions in synthetic sapphire.
Cat's-eye	do	Greenish to brownish	Small to large	do	8.5	3.69-3.84	do	1.75	Synthetic, shell	Cloudy and wavy bands.
Chrysolite	do	Yellow, green, brown	Medium	Medium	8.5	3.69-3.84	do	1.75	Tourmaline, peridot	Refractive index, alloy.
Coral	Calcium carbonate	Orange, red, white, black, green.	Branching, medium.	Low	3.5-4.0	2.6 -2.7	do	1.49-1.66	Fossil coral	Dull translucent.
Corundum:										
Ruby	Aluminum oxide	Rose to deep purplish red	Small	Very high	9.0	3.95-4.10	Double	1.76	Synthetics, including spinel.	Inclusions, fluorescence.
Sapphire	do	Blue	Medium	High	9.0	3.95-4.10	do	1.76	Synthetics, including spinel.	Inclusions, double refraction, dichroism.
Sapphire, fancy	do	Yellow, pink, white, orange, green, violet.	Medium to large.	Medium	9.0	3.95-4.10	do	1.76	Synthetics, glass and doublets.	Inclusions, double refraction, refractive index.
Sapphire and ruby (star).	do	Red, pink, violet blue, gray.	do	High to low	9.0	3.95-4.10	do	1.76	Star quartz, synthetic stars.	Shows asterism, color on side view.
Sapphire or ruby synthetic.	do	Yellow, pink, blue, red, white, green, violet.	Up to 20 carats	Low	9.0	3.95-4.10	do	1.76	Synthetic spinel, glass.	Curved cross, bubble inclusions.
Diamond	Carbon	White, blue-white, yellow, brown, green, pink, blue.	Any	Very high	10.0	3.516-3.525	Single	2.42	Zircon, titania, cubic zirconia.	High index, dispersion, single refraction, hardness, cut, luster.
Feldspar:										
Amazonstone	Alkali aluminum silicate.	Green	Large	Low	6.0-6.5	2.56	—	1.52	Jade	Cleavage, shows, viewed to poorly, opaque, grid.
Labradorite	do	Gray with blue and bronze sheen color play.	do	do	6.0-6.5	do	—	1.56	do	do.
Moonstone	do	White	do	do	6.0-6.5	2.77	—	1.53-1.54	Glass or white onyx	Blue sheen, opalescent.
Garnet	Complex silicate	Brown, black, yellow, green, ruby red, orange.	Small to medium.	Low to high	6.5-7.5	3.15-4.30	Single strained.	1.76-1.85	Synthetics, spinel, glass.	Single refraction, anomalous strain.
Jade:										
Jadeite	do	Green, yellow, black, white, mauve.	Large	Low to very high.	6.5-7.0	3.3-3.5	Cryptocrystalline.	1.65-1.68	Onyx, bowenite, vesuvianite, grossularite.	Luster, specimen, translucent, to opaque.
Nephrite	Complex hydrous silicate.	do	do	do	6.0-6.5	2.95-3.10	do	1.61-1.63	do	do.
Peridot	Iron magnesium silicate.	Yellow, green	Any	Medium	6.5-7.0	3.27-3.37	Double (strong).	1.65-1.69	Tourmaline, chrysoberyl	Strong double refraction, low dichroism.
Opal	Hydrous silica	Colors flash in white gray, black, red, yellow.	Large	Low to high	5.5-6.5	1.9-2.3	Isotropic	1.45	Glass, synthetics, plastics, doublets, triplets.	Play of color.
Pearl	Calcium carbonate	White, pink, black	Small	do	2.5-4.0	2.6-2.85	—	—	Cultured and imitation	Luster, structure, x-ray.
Quartz:										
Agate	Silica	Any color	Large	Low	7.0	2.59-2.64	—	—	Glass, plastic, Mexican onyx.	Cryptocrystalline, irregularly banded.
Amethyst	do	Purple	do	Medium	7.0	2.65-2.65	Double	1.55	do	Refractive index, double refraction, transparent.
Citrine	do	Smoky	do	Low	7.0	2.65-2.65	do	1.55	do	Do.
Citrine	do	Yellow	do	do	7.0	2.65-2.65	do	do	do	Do.
Crystal, rock	do	Colorless	do	do	7.0	2.65-2.65	do	do	do	Do.
Jasper	do	Uniform or spotted red, yellow, green.	do	do	7.0	2.59-2.91	—	—	do	Opaque, vitreous.
Onyx	do	Many colors	do	do	7.0	2.59-2.91	—	—	do	Uniformly banded.
Rose	do	Pink, rose red	do	do	7.0	2.65-2.65	do	1.55	do	Refractive index, double refraction, translucent.
Spinel	Magnesium aluminum oxide.	Any	Small to medium	Medium	8.0	3.5 -3.7	Single	1.72	Synthetic, garnet	Refractive index, single refraction, isotropic.
Spinel, synthetic	do	Any	Up to 40 carats	Low	8.0	3.5 -3.7	Double	1.73	Spinel, corundum, beryl, topaz, alexandrite.	Weak double refraction, curved cross, bubbles.
Spodumene:										
Kunzite	Lithium aluminum silicate	Pink to lilac	Medium	Medium	6.5-7.0	3.13-3.20	Double	1.66	Amethyst, morganite	Refractive index.
Hiddenite	do	Yellow to green	do	do	do	do	do	do	Synthetic spinel	Do.
Tanzanite	Complex silicate	Blue	Small	High	6.5-7.0	3.20	do	1.69	Sapphire, synthetics	Strong trichroism.
Topaz	do	White, blue, green,	Medium	Low to medium	8.0	3.4 -3.6	do	1.62	Beryl, quartz	Refractive index.
Tourmaline	do	All, including mixed	Medium	do	7.0-7.5	3.00-3.20	do	1.63	Peridot, beryl, corundum, glass.	Double refraction, refractive index.
Turquoise	Copper aluminum phosphate	Blue to green	Large	Low	6.0	2.60-2.83	do	1.63	Glass, plastics	Difficult - stone not present, stone usually banded.
Zircon	Zirconium silicate	White, blue, brown, yellow, green.	Small to medium	Low to medium	6.0-7.5	4.0 -4.8	Double (strong)	1.79-1.98	Diamond, synthetics, topaz, sapphire.	Double refraction, strongly dichroic, wear on facet edges.

[1]Small—up to 5 carats; medium—up to 50 carats; large—over 50 carats. [2]Low—up to $25 per carat; medium—up to $2000 per carat; high—over $2000 per carat.

Source: Gemstones, Mineral Facts and Problems, 1985 Edition, U.S. Department of Interior.

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Of this total, an estimated $20 million is reportedly used in cooperative advertising arrangements with local retailers.

Economic factors.--The U.S. gemstone industry relies heavily on imports for virtually all of the necessary rough stones. Commercial mining in the United States has never been extensive. The principal natural diamond-producing countries in 1985 were South Africa, Botswana, the U.S.S.R., Zaire, and Australia. Foreign countries with major deposits of other gemstones are Afghanistan (beryl and tourmaline); Australia (opal and sapphire); Brazil (agate, amethyst, beryl, ruby, sapphire, tourmaline, and topaz); Burma (beryl, imperial jade, ruby, sapphire, and topaz); Sri Lanka (beryl, ruby, sapphire, and topaz); Colombia (emerald); Kenya (garnet and beryl); Madagascar (beryl, rose quartz, sapphire, and tourmaline); Mexico (agate, opal, and topaz): Tanzania (tanzanite); and Zambia (amethyst and emerald).

As previously mentioned, the United States is virtually 100-percent dependent on imports for its rough gemstones and materials. This dependency on imports discourages a large domestic cutting industry and subjects that which does exist to the uncertainties of production in other countries. The principal supplying countries to the United States are intermediaries where the skill for cutting and polishing is established. The most available data on world production of gemstones is for gem diamonds, which are mined primarily in Australia, Africa, and the U.S.S.R. (table D-10). Gemstones can also be recovered from jewelry and other decorative items, recut and set in different pieces. However, no data exists on the total value of this recovery, and it is believed to be negligible.

The leading U.S. suppliers of diamonds are listed in table D-11 and those for colored gemstones are listed in table D-12. The lists are separated by type of stone, kind, weight, and country, in 1985. Diamonds accounted for 89 percent of total natural gemstone imports in 1985. Emeralds, sapphires, and rubies followed diamonds in order of importance.

The value of a gemstone is usually determined by its beauty, durability, rarity, lack of inclusions or surface blemishes, and cut. In the case of diamonds, the most important factor in determining price is the control over production, distribution, and prices exercised by the CSO. Other factors that influence price include exchange rates, speculation, existence or development of a secondary cutting market, and the extent to which stones are used as investments. Table D-13 lists the average declared value per carat of principal gemstones imported during 1981-85. The decline in the average value of each type of stone probably contributed to the increase in demand for gemstone jewelry over the period.

Effects on jewelry manufacturers.--The United States is the world's largest consumer of cut gemstones, the bulk of which, by value, are gem diamonds. Gemstones are used to add color and variety to a wide range of jewelry designs. They can be used in virtually all articles of jewelry and are often mixed, by size and color, to flatter the article as well as the wearer. The gemstone market affects jewelry manufacturers primarily in design. The size and color of stones can influence a design, whereas effective promotion of gemstones can affect retail sales trends.

Table D-10
World production of gem diamonds, by country, 1982-86

Country	1982	1983	1984	1985	1986	Share of total 1986	Change, 1986 from 1982
	1,000 carats					Percent	
Australia	274	3,720	3,414	4,235	11,970	34.6	4,268.6
Botswana	1,165	4,829	5,810	5,800	6,450	18.6	453.6
South Africa	3,342	4,554	4,516	4,550	4,635	13.4	38.7
U.S.S.R.	2,100	3,700	4,300	4,400	4,500	13.0	114.3
Zaire	308	3,355	5,169	5,493	4,180	12.1	1,257.1
All other	3,054	2,881	2,944	2,677	2,854	8.3	-6.5
Total	10,243	23,039	26,153	27,155	34,589	100.0	237.7

Source: U.S. Bureau of Mines, Department of Interior.

Table D-11
Diamonds: U.S. imports for consumption by principal sources, 1985

	Carat weight	Value in millions of dollars
Rough or uncut:		
South Africa	555,907	$189.4
United Kingdom	116,601	52.0
Belgium-Luxembourg	130,996	32.9
Switzerland	15,106	10.4
All other	224,203	32.8
Total	1,042,813	317.5
Cut but unset:		
Not over 0.5 carat:		
India	2,667,906	486.8
Israel	1,237,123	448.2
Belgium-Luxembourg	1,466,325	444.8
Hong Kong	146,416	39.4
All other	451,275	133.2
Total	5,969,045	1,552.4
Over 0.5 carat:		
Israel	439,038	340.9
Belgium-Luxembourg	369,838	314.7
Switzerland	46,098	148.5
South Africa	76,025	77.4
All other	208,148	255.2
Total	1,139,147	1,136.7
Total diamond	8,151,005	3,006.6

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table D-12
Colored gemstones: U.S. imports for consumption, by principal sources, 1985

Gemstone/country	Carat weight	Value in millions of dollars
Emeralds:		
Colombia	197,249	56.1
Switzerland	163,048	23.9
Israel	101,683	11.5
India	1,413,167	11.0
All other	866,166	36.5
Total	2,741,313	139.0
Rubies:		
Thailand	2,770,136	31.2
Switzerland	296,877	15.6
United Kingdom	33,713	6.4
Hong Kong	110,033	3.7
All other	469,938	12.8
Total	3,680,697	69.7
Sapphires:		
Thailand	2,765,371	32.4
Switzerland	431,909	17.0
United Kingdom	60,549	6.1
Hong Kong	166,329	4.8
All other	403,611	10.5
Total	3,827,769	70.8
	Carat weight 1/	**Value in million dollars**
Other gemstones 2/:		
Rough or uncut:		
Brazil		14.0
Colombia		9.8
Australia		1.5
Hong Kong		0.9
All other		6.9
Total		33.1
Cut, set, and unset:		
Hong Kong		18.9
West Germany		10.7
Brazil		10.5
Taiwan		5.6
All other		22.9
Total		68.6
Total colored gemstones	3,827,769 3/	381.2

1/ Not available
2/ Includes coral, marcasites, natural pearls, and various other natural gemstones.
3/ Includes only emeralds, rubies, and sapphires.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table D-13
Gemstones: Average declared value of U.S. imports for consumption, by type, 1981-85

Gemstone	1981	1982	1983	1984	1985	Change, 1985 from 1981
Diamonds:						
Rough natural.....	$432.41	$310.52	$285.35	$300.21	$304.55	-29.6
Cut, unset:						
Not over 0.5 cara..	341.64	308.83	270.52	250.93	260.08	-23.9
Over 0.5 carat.....	1,734.45	1,317.49	1,140.66	975.18	997.85	-42.5
Emeralds, cut, unset...	57.25	55.75	63.36	35.07	50.72	-11.4
Rubies, cut, unset.....	1/	34.04	23.95	16.42	18.94	1/
Sapphires, cut, unset..	1/	24.53	24.54	22.56	18.50	1/

1/ Not available.

Source: U.S. Bureau of Mines, Department of Interior.

The diamond market is evidence of this relationship. During the late 1970's, demand for rough stones expanded significantly because of speculative investment, which was a result of high inflation and hoarding by merchants and cutters that were trying to find a hedge against economic uncertainties. In response, prices rose dramatically. The CSO (DeBeers) followed by reducing production levels and restricting sales of rough to that which yields small cheaper stones. During the early 1980's, jewelry designs stressed small diamonds and began a gradual push toward the increased use of colored stones. These designs, therefore, developed out of the rising cost of the input material and the general economic recession that reduced the disposable income for jewelry purchases. The switch to lower cost materials permitted the retail price of jewelry to drop and stimulate demand. By 1984, as the diamond market stabilized and general economic strength was up, demand for larger more expensive stones began to increase.

During 1981-84, however, many domestic diamond cutters went out of business because of the shift in consumer demand toward small diamonds, which are not cut by the U.S. industry. Primarily, domestic demand was met by imported cut stones, reflecting the growing trend toward lower value and size gemstones, especially in cut diamonds. Belgium remained the leading exporter of cut diamonds to the United States, but, according to trade sources, a large portion of these exports were of Russian, Indian, and Israeli origin. India was the largest supplier in terms of quantity shipped, but the diamonds were of low quality and small in size. In 1985, colored gemstones were imported principally from Brazil, Colombia, Australia, Thailand, and Hong Kong.

Recently, there has been a large increase in the consumption of cut colored stones (mostly natural gemstones, except for diamonds) by jewelry manufacturers seeking alternatives to diamonds and adding colors to their designs. Diamond prices, in many cases, have been too high for consumers to be able to afford them. Jewelry manufacturers have sought out a wider range of less traditional and relatively inexpensive semiprecious and synthetic stones. Other stones becoming popular include turquoise, garnet, aquamarine, topaz, citrine, opal, and amethyst.

Appendix E

Distribution of Gold Jewelry Purchases in Selected World Markets, by Reason, Purpose, and Occasion

Table E-1
Distribution of items purchased in selected world markets, by reason

Market	Gifts	Self-purchases
	Percent	
Austria	56	44
France	66	34
West Germany	64	36
Italy	68	32
Switzerland	57	43
United Kingdom	74	26
United States	60	40
Canada	59	41
Japan	18	82
Hong Kong	37	63
Average per market	56	44

Source: Gold Jewelry Markets International Review, International Gold Corp., Ltd., March 1985, p. 44.

Table E-2
Distribution of items purchased in selected world markets for a particular reason, by purpose

Market	Gifts for			Self-purchases by	
	Women	Men	Children	Women	Men
	Percent				
Austria	78	22	1/	79	21
France	67	13	20	82	18
West Germany	73	17	10	81	19
Italy	66	17	17	79	21
Switzerland	68	12	20	74	26
United Kingdom	77	11	12	80	20
United States	88	12	1/	89	11
Canada	81	19	1/	93	7
Japan	94	6	1/	86	14
Hong Kong	84	16	1/	67	33
Average per market	78	15	2/16	81	19

1/ Not available.
2/ Includes only those markets where information was available.

Source: Gold Jewelry Markets International Review, International Gold Corp., Ltd., March 1985, p. 45.

Table E-3
Distribution of items purchased in selected world markets, by occasion

Market	Christmas/ New Year	Birthdays	Weddings/ engagements	Anniversaries	Baptisms/ barmitzvahs	Other occasions	Don't know
	(Percent)						
Austria	39	18	12	6	2	17	6
France	14	19	10	4	10	37	6
West Germany	35	24	7	3	1	23	7
Italy	18	19	15	2	7	26	13
Switzerland	23	21	5	2	5	19	25
United Kingdom	34	27	7	4	-	21	7
United States	48	21	5	6	1/	10	15
Canada	35	17	4	14	-	14	15
Japan	2	8	6	3	-	65	16
Hong Kong	2	15	19	-	-	56	8
Average per market	25	19	9	2/ 5	2/ 5	29	12

1/ Not available.
2/ Includes only those markets where information was available.

Source: Gold Jewelry Markets International Review, International Gold Corp., Ltd., March 1985, p. 46.

Appendix F

Distribution of Gold Jewelry Purchases in Selected World Markets, by Product

Table F-1
Distribution of items purchased in selected world markets, by product

Market	Rings	Neckwear	Wristwear	Earrings	Watches	Brooches/ other jewelry
	Percent					
Austria	36	31	8	10	7	8
France	31	30	9	22	4	4
West Germany	36	26	11	12	3	12
Italy	36	25	8	13	8	10
Switzerland	30	30	9	16	4	11
United Kingdom	27	26	11	26	4	6
United States	23	38	8	28	1/	3
Canada	26	32	7	24	1/	11
Japan	37	36	9	6	2	10
Hong Kong	39	28	19	5	-	9
Average per market	32	30	10	16	2/ 5	8

1/ Not available.
2/ Includes only those markets where information was available.

Source: Gold Jewelry Markets International Review, International Gold Corp., Ltd., March 1985, p. 42.

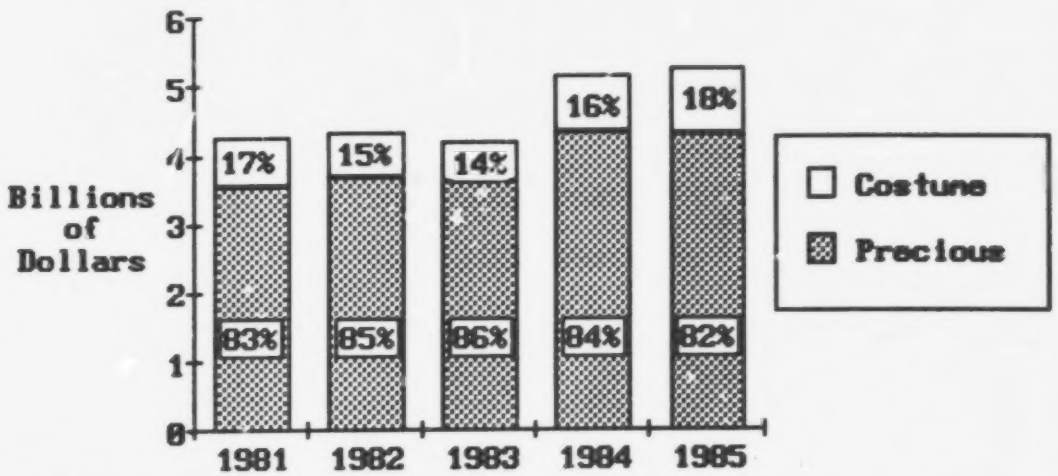
Appendix G

Relative Importance of Precious Jewelry to Total Jewelry World Trade, the U.S. Industry, and the U.S. Market

The total value of world trade in all jewelry products, precious and costume, rose 15 percent from 1981 to 1985 and reached over $10 billion for the first time in 1984. Of that value, the total share accounted for by precious jewelry increased from 85 percent in 1981 to 87 percent in 1983 and declined to 83 percent in 1985. In comparison, the total value of U.S. trade (imports and exports) in jewelry doubled from $1.2 billion in 1981 to $2.4 billion in 1985. The relative share accounted for by precious jewelry rose from 76 percent in 1981 to 79 percent in 1985, considerably less than the precious jewelry share in world trade. The share of total U.S. trade accounted for by imports increased from 86 percent in 1981 to 93 percent in 1985. This indicates an increasing importance of imports to the total U.S. trade in jewelry, as evidenced by the substantial increase in the U.S. trade deficit for all jewelry.

World imports of all jewelry rose $83 million during 1981-82 and then declined by $152 million in 1983 to $4.2 billion. Since then, it has steadily increased to $5.3 billion in 1985 for an overall increase of 23 percent during the period. As shown in figure G-1, the share of total imports accounted for

Figure G-1
All jewelry: World imports, by type, 1981-85



Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

by precious jewelry rose from 84 percent in 1981 to 86 percent in 1983 and dropped to 82 percent in 1985. The absolute value of precious jewelry imports fluctuated during the period, but realized a net increase of 20 percent. The decrease in share accounted for by precious jewelry during 1981-83 can be attributed to a worldwide increase in demand for less expensive costume jewelry resulting from the instability in the precious metals and exchange-rate markets. These factors combined to present both producers and consumers with unique problems relative to local costs and prices for precious materials and jewelry products. U.S. imports of all jewelry rose 4 percent

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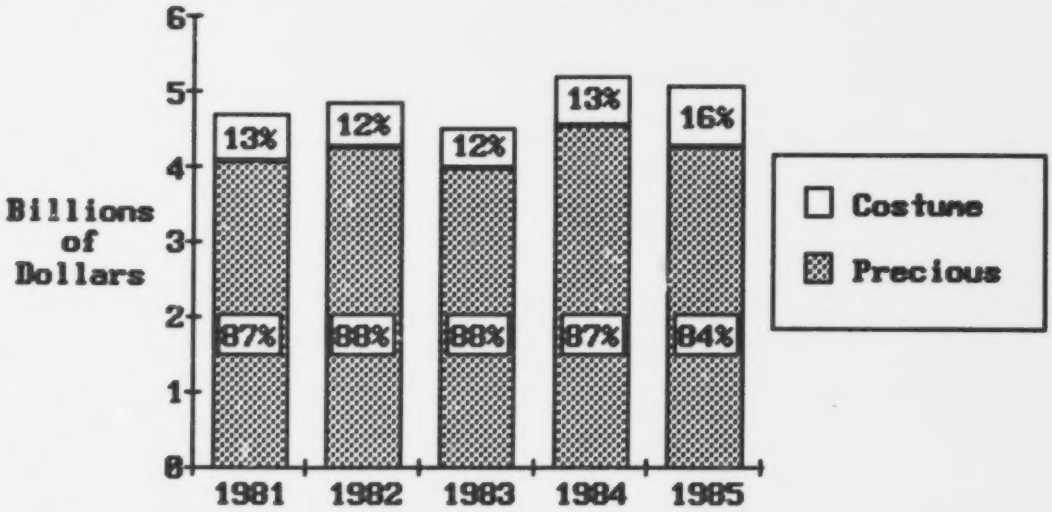
from $1.0 billion in 1982 to $1.1 billion in 1983. Since then, they have doubled to $2.2 billion in 1985. Precious jewelry accounted for an average of almost 80 percent of the total jewelry imports during the period. Imports of precious jewelry rose an average of 23 percent per year, and those of costume jewelry, 25 percent per year.

In comparison, figure G-2 shows that world exports followed a similar fluctuating pattern, peaking in 1984 at $5.2 billion and declining slightly to $5.1 billion in 1985. Overall, such exports rose 8 percent from 1981 to 1985. The relative share of exports accounted for by precious jewelry rose

Figure G-2
All jewelry: World exports, by type, 1981-85



Source: Estimated by the staff of the U.S. International Trade Commission based on United Nations and national trade statistics.

from 87 percent in 1981 to 88 percent in 1982 and 1983 and declined to 84 percent in 1985. In absolute terms, the value of precious jewelry exports fluctuated from $3.9 billion to $4.6 billion during the period and settled at $4.3 billion in 1985. U.S. exports of all jewelry dropped from $175 million in 1982 to $148 million in 1984, or by 15 percent. By 1985, such exports recovered to $165 million for an overall decrease of 6 percent. The share accounted for by precious jewelry fluctuated during 1982-83 when it reached 63 percent. During 1983-85, the share of precious to total jewelry exports rose to 74 percent. Although the absolute value of precious jewelry exports fluctuated during the period, it recovered during 1983-85 and registered a 5-percent increase over the period. In contrast, costume jewelry exports exhibited an annual decline amounting to 34 percent, or 8 percent per year, over the period.

Apparent U.S. consumption of all jewelry rose 39 percent during 1982-85, an average of almost 12 percent per year, and amounted to $6.7 billion in 1985 (table G-1 and fig. G-3). Precious jewelry consumption accounted for an

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Table C-1
All jewelry: U.S. Producers' shipments, exports of domestic merchandise, imports for consumption, and apparent consumption, 1982-85

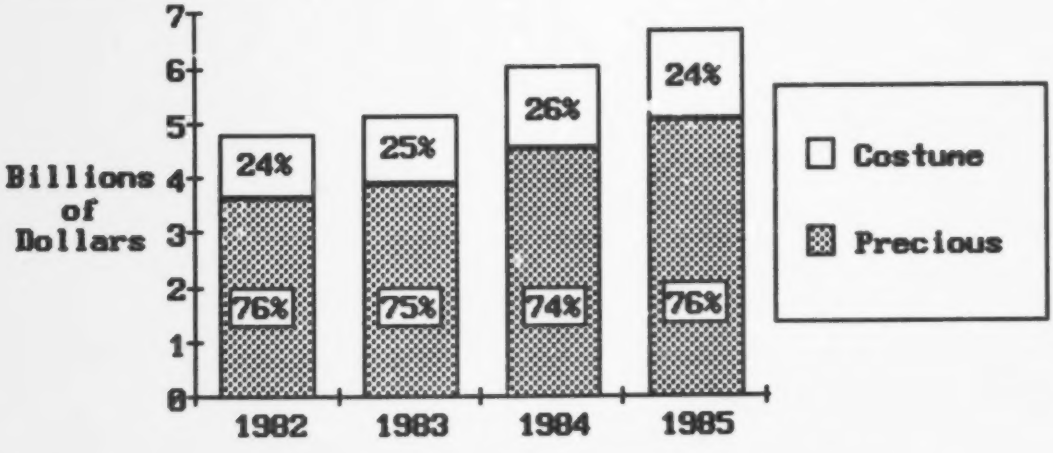
(Value in million dollars; change in percent)

Year	Producers' shipments 1/	Exports	Imports	Trade balance	Apparent consumption	Ratio (percent) of imports to consumption
			Value			
1982.....	3,983	175	1,034	859	4,842	21.4
1983.....	4,280	172	1,072	900	5,180	20.7
1984.....	4,638	148	1,575	1,427	6,065	26.0
1985.....	4,698	165	2,188	2,023	6,721	32.6
			Change			
Change, 1985 from 1982..	18.0	-5.7	111.6	135.5	38.8	52.3
Average annual change, 1985 from 1982.....	5.7	-1.9	28.4	33.0	11.6	15.1

1/ Projected from shipments data in response to questionnaires of the U.S. International Trade Commission.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Figure C-3
All jewelry: Apparent U.S. consumption, by product, 1982-85



Source: Compiled from Commission questionnaire responses for producers' shipments data and from official statistics of the U.S. Department of Commerce.

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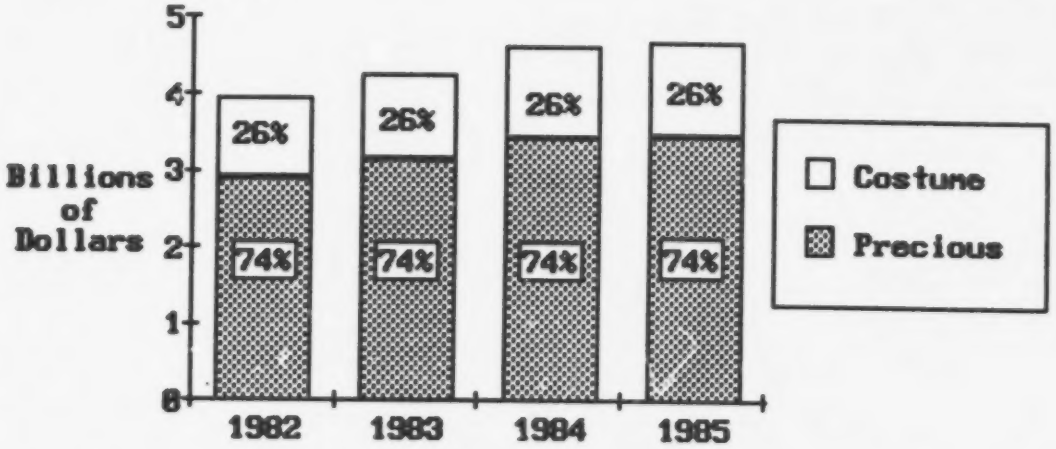
average of 76 percent of the total consumption during the period. As a share of total consumption, imports accounted for 21 percent during 1982-83 and then rose 6 percent per year to 33 percent in 1985. This increase was due primarily to a 26-percent-per-year increase in imports of precious jewelry combined with a 38-percent-per-year increase in imports of costume jewelry. On the other hand, U.S. exports of all jewelry declined 2 percent per year and amounted to $165 million in 1985. Although precious jewelry accounted for 70 percent of the total jewelry exports, the overall decline resulted from a 6-percent-per-year decline in costume jewelry exports.

Total U.S. shipments of all jewelry increased 18 percent from $3.9 billion in 1982 to $4.7 billion in 1985 (figure G-4). U.S. producers' shipments of precious jewelry increased an average of 6 percent per year during the period and accounted for 74 percent of total shipments in 1985. In comparison, shipments of costume jewelry increased 5 percent per year.

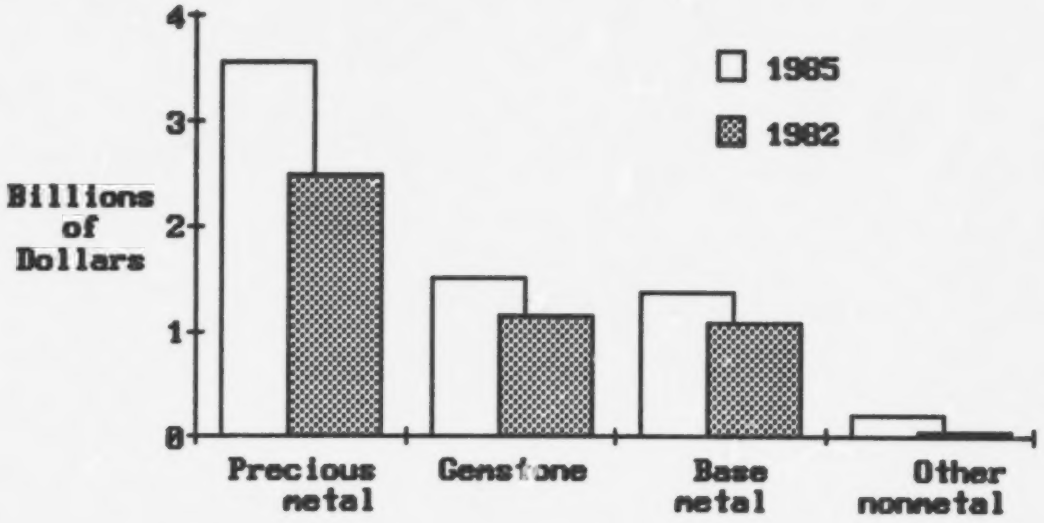
Figure G-4
All jewelry: U.S. producers' shipments, by type, 1982-85

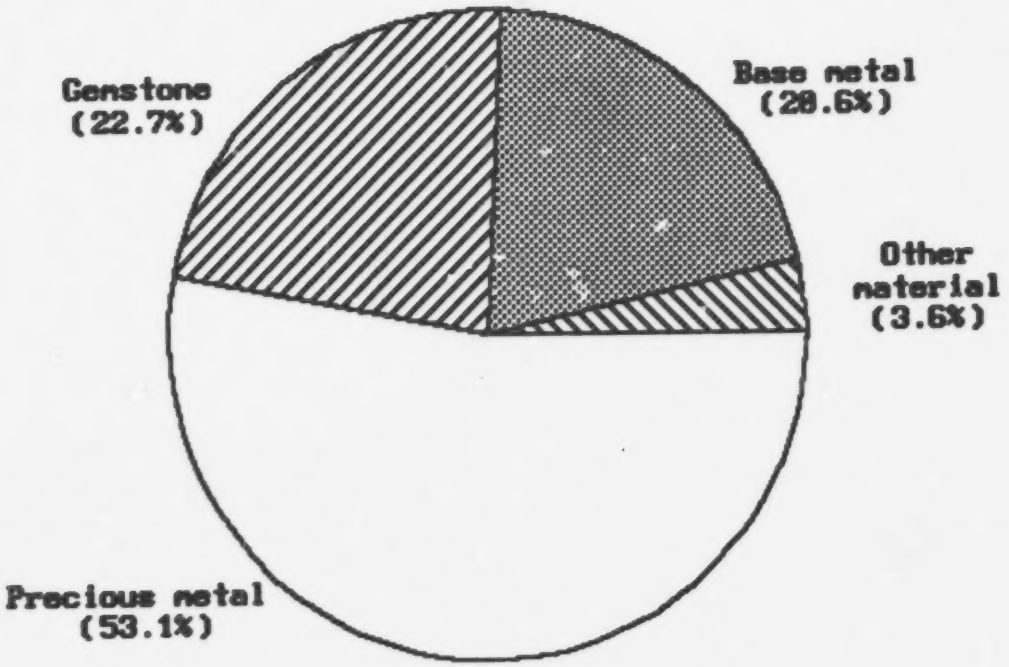


Source: Compiled from Commission questionnaire responses for producers' shipments data.

Figure G-5 shows the change in apparent U.S. consumption in absolute terms of the major product categories included in both phases of investigation No. 332-222. As can be seen, over one-half of the total jewelry consumption in 1985 was accounted for by precious-metal jewelry. Total consumption of gemstone and base-metal jewelry were about the same, and that of other nonmetal jewelry accounted for the remainder. The dominance of precious-metal jewelry can most likely be attributed to the intrinsic value of the metal which comprises the bulk of the total value of the product.

Figure C-5
All jewelry: Apparent U.S. consumption, by type, 1982 and 1985, and share of consumption, by type, 1985





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Appendix H

Supplementary Competitor Country Information

Scope of International Competition

As an internationally traded commodity, jewelry presents unique opportunities and problems for many of the participants in the market. Opportunities for both personal and professional gratification can be exploited while actively participating in this market. In addition, the opportunities extend beyond producers and traders, to consumers in all of the world's markets. When jewelry pieces with local designs, heavily influenced by local cultures, are traded worldwide, customers in foreign lands have the opportunity to purchase a piece of that foreign culture. However, many problems also exist in the international trade of jewelry. For example, problems arise in the acquisition of materials, in financing the necessary high-cost materials during production, in subjective cultural design preferences in local markets, in different national standards as to quality, and in the many economic factors that affect the markets for finished products and raw materials.

The demand for and supply of jewelry in international trade depends on a variety of economic factors and subjective preferences. The importance of personal adornment to many nations' religious practices, cultural beliefs, and social habits subjectively influence the demand for jewelry. Economic factors include a country's level of per capita disposable income, costs of basic necessities, and price and availability of substitutable items. On the supply side, costs of raw materials and production, various national and local taxes, and national standards as to quality of materials and craftsmanship all affect the ability of producers to bring products to the market. Historically, jewelry, particularly that made of precious materials, has been a symbol of wealth, social status, and power, and, since it is generally considered a luxury good, a healthy economy is necessary to sustain the market.

Precious jewelry producers worldwide were faced with significant new problems during the late 1970's and early 1980's as the price of gold, the major raw material used in precious jewelry production, skyrocketed to new highs. This not only caused the costs of production to rise, but also forced prices for finished products to increase as well. In addition to the high gold prices, an economic recession contributed to the slack in consumer demand, causing precious jewelry industries in all nations to suffer. Independently, each industry determined its own course in overcoming these problems. The strongest to emerge was Italy, which today supplies more than one-half of all precious jewelry, principally made of gold, worldwide.

In 1982, as gold prices stabilized and economic recovery began, worldwide demand for all luxury goods, including jewelry, increased. However, the buying consumer was more aware of value and demanded a good product at a reasonable price. As a consequence, producers in many countries were forced to match their products with price points that were acceptable to the consumer and to increase the quality and efficiency of production. New technologies were developed to reduce the labor content in products made of metal, and new styles, lighter weight products, and cheaper alloys and metal compounds were developed to hold down prices and give consumers what they wanted. The worldwide transfer of technology, government incentives, and cost advantages, including lower tax rates and lower import duties on raw materials, have provided incentives for the development of precious jewelry industries in some countries that previously were not major factors and strengthened those which were.

Precious jewelry is generally medium-to-high priced and strongly influenced by the latest style trends motivated by consumer tastes and designer fashions. This fashion element plays a significant role in the development of some national industries. For example, many European countries are successful in producing precious jewelry because of their worldwide recognition as design centers. The following section discusses some of the major suppliers of precious jewelry that compete with the United States for third country market shares.

H.1. Italy

Italy has been the world's largest consumer of gold for jewelry production for more than 5 years and accounted for 22 percent of the total gold used in karat jewelry production in the world in 1985. During 1981-85, Italy was also the world's leading exporter of precious jewelry, accounting for over 50 percent of total world exports in 1985, more than five times greater than the second leading supplier. According to tables 3-1 and 3-2, Italian exports of precious jewelry rose by 18 percent from $1.9 billion in 1981 to $2.3 billion in 1985. Virtually 100 percent of Italy's precious jewelry exports are made of precious metal, primarily gold. This product is made in all karatages, depending on the market in which the product will ultimately be sold. According to Italian industry sources, exports account for an average of 70 percent of production, however, some firms export 100 percent. The average share of Italian gold chain production for export reportedly is even greater.

Exports of precious jewelry from Italy rose 4 percent per year during 1981-85 and amounted to $2.3 billion in 1985, accounting for 50 percent of world exports. Arab countries were the leading markets in 1981, however, exports to such countries declined from 39 percent of total exports in 1981 to 25 percent in 1985. Total exports shifted heavily from those countries to the United States, where the share of such exports increased from 22 percent in 1981 to 45 percent in 1985. Other European countries' share of total exports from Italy dropped slightly from 19 percent to 16 percent during the period. The bulk of Italian precious jewelry exports are accounted for by chain products. Total Italian imports of precious jewelry are negligible compared with exports and in 1985, amounted to $27 million, approximately 1 percent of the total exports.

Italian goldsmithing dates back centuries. Italians have long been leaders in designing precious jewelry and producing those designs with efficiency and craftsmanship. Today, Italy is recognized as the world leader in precious jewelry production on the basis of creativity in design, quick turnover of designs, consistency of quality, and price. However, as skillfully as the Italian industry has accommodated changes in the market through the development of new designs, they have also met challenges in production through the development of new technologies and mechanization to hold down costs and increase efficiency.

Jewelry production in Italy is undertaken nationwide; however, over 50 percent of the firms are concentrated in or near four principal production centers. Three of these centers form what is known as the golden triangle. At the southern tip of the triangle is Arezzo, to the northeast is Vicenza, and to the northwest, Valenza. Together, in terms of the volume of gold worked, these three centers account for approximately 75 percent of the total

Italian gold jewelry production. Thirty-five percent is accounted for by producers in Vicenza, and the remainder is equally divided between those in Arezzo and Valenza. The fourth major concentration of firms is in the commercial center of Milan. Other major centers of jewelry production and their product concentration include Torre del Greco (cameos) and Milan (gemstone jewelry and jewelry-making machinery).

Each of these centers concentrate on the production of a particular type of product. Arezzo and Vicenza specialize in the automated production of mass volume low-cost gold jewelry, such as chains, rings, and bracelets, typical of the industrial-style production. Valenza is noted for its production of high-value-added jewelry, incorporating precious and semiprecious gemstones, typical of the artisan or craftsmen in Italy. This type of product is generally high priced and Valenza is known for its high quality.

Arezzo is known for its goldsmithing artistry and low-value-added machine-made products, principally chain and hollowware. Producers in and near Vicenza tend to specialize in medium-value-added, hand-finished gold products. An estimated 80 percent of production in Vicenza is reportedly produced by stamping or chainmaking machines. Principal products of this region are chains, watchbands and other jewelry articles containing small gemstones.

The Italian industry is highly competitive and characterized by many small firms, primarily artisanal, where the owner is active in all areas of product development, production, and marketing. Prior to 1981, there was reportedly a consolidation of the Italian industry and expansion of existing firms; however, since then, there reportedly has been significant entry into and, to a lesser extent, exit from the industry. According to the 1981 Italian Census of Industry, there were approximately 8,700 firms producing articles of gold and jewelry in Italy. Industry sources indicate that these figures are accurate and that there has been an estimated 10- to 15-percent increase since then. To illustrate the relative size of the firms located in the major producing areas, according to the Italian Census of Industry, the number of firms, total employees, and average number of employees per firm in 1981 were as follows:

Location	Number of firms	Number of employees	Number of employees per firm
Arezzo.....	542	5,212	9.6
Vicenza.....	631	5,690	9.0
Valenza.....	1,491	7,162	4.8
Milan.....	1,101	5,052	4.6
All other...	4,936	17,793	3.6
Total...	8,701	40,909	4.7

Although, on average, there are between 4 and 10 employees per firm, some larger industrial companies employ between 50 and 100 workers, and a few employ between 300 and 500 workers. In fact, the world's largest jewelry manufacturer, in terms of the number of employees, is located in Arezzo. According to Italian industry representatives, labor involved in producing a machine-made product costs approximately 20 cents per gram, whereas that for handmade products range from $2 to $3 per gram. Although production in Italy

is highly specialized, an exact ratio of value added to total cost is not available and reportedly is impossible to determine because of the wide variety of products and the characteristics of each. However, it is estimated that the total cost of labor and overhead accounts for 5 percent of the total cost of machinemade products, and 35 percent of that for handmade products. The remaining cost is usually accounted for by materials, metal, or gemstones. Unskilled workers in the precious jewelry industry reportedly earn between $8 to $12 per hour, including social costs, whereas skilled workers earn approximately $15 per hour. Total net pay for unskilled workers is estimated to be between $6 and $10 per hour and the average workweek is 39 hours.

There are a number of schools for jewelry design throughout Italy. Many are supported by either the State or regional government, or local industry associations and groups. There are schools for design located in the major producing centers and schools for goldsmithing in Arezzo. There also exist various Government programs for all industries that promote hiring youth by providing less restrictive labor laws while they are in training (generally 18 months).

The Italian precious jewelry industry is vertically integrated with most firms undertaking all facets of production. Production techniques include investment casting (rubber moldmaking and gypsum chalk investments) using vacuum and centrifugal systems; electronic induction furnaces for forging, stamping, and tumbling polishers; and ultrasonic cleansing baths. According to industry sources, only the very small firms buy alloyed metals. Most acquire pure gold and make their own. They obtain pure gold, mix the necessary alloys, produce semifinished pieces of mostly original designs, and perform the finishing operations. New designs are reportedly developed and marketed every 3 to 6 months. There is reportedly very little subcontracting or homework, and the bulk of the workforce is women.

The Italian production philosophy is based on specialization of production because it reportedly allows companies to produce a higher quality product, efficiently and at competitive prices. Although some firms produce a variety of products, most concentrate production on one type of item, either cast, stamped, or chain. According to Italian industry representatives, an estimated two-thirds of precious jewelry production is accounted for by chains. However, of the total gold jewelry, an estimated 80 percent is chain, 95 percent of which is machinemade. After it is made, the chain is generally hand finished and polished. Among the various types of chain products made are solid-link types of all styles, handmade and machinemade rope chains, and hollow link chains of different styles and sizes. 1/ There are reportedly 30 major chain manufacturers in Italy, indicating that the concentration of production in the chain sector is very high.

1/ Hollow link chain is formed by bonding a gold alloy to a base-metal base and then milling out thin strips of the compound. These strips are then passed through a series of different milling machines that shape them until they form a hollow wire. The wire is then fed to chainmaking machines that form links and join them together. Finally, the completed chain is placed in an acid bath that eats away the base metal inside each link leaving a hollow link chain of the desired alloy.

The remainder of Italian production, other than chain, by product, reportedly consists of rings (16 percent), bracelets (7 percent), earrings (6 percent), and other articles (4 percent). An estimated 75 percent of these products are machine made, stamped or cast, and hand finished and polished. Industry representatives also indicated that there was a very large volume of exports of unfinished mountings ready to be set with stones. Reportedly, this is due to the relatively free international trading of cut gemstones and differences in tariff rates between unfinished jewelry findings and finished articles in many markets. Of jewelry products other than chain, an estimated 60 percent is accounted for by articles made solely of gold and it's alloys. An estimated 30 percent incorporate diamonds or other gemstones, and the remainder include other articles that incorporate coral, cameos, and/or other materials. All products reportedly receive a slight electroplating, or flashing (generally 3 to 5 microns), to highlight the brilliance of the gold in the finished piece.

The popularity of Italian jewelry is primarily due to the creativity of design; however, advanced technology used in production, especially the industrial chain sector, significantly adds to the competitiveness of the industry by holding down costs. An estimated 75 percent of total industry capacity is utilized industrywide, and, in the highly automated production of chain, 100 percent of capacity is reportedly utilized in most firms because the machines run all night.

Most machinery used in the production of precious jewelry is made in Italy. The skills required to produce the machines were developed in Germany in tho 1920's and progressively moved into the Swiss watchmaking industry and then into Italy. According to Italian industry sources, almost two-thirds of Italy's production of jewelrymaking machinery is exported to various markets worldwide. Chain machinery is reportedly the most often exported because it is generally the lowest in cost, easy to install, and easy to operate. The Italian industry reportedly researches new technologies for producing finished products and various types of equipment used in production on a continuous basis. Industry representatives report that the cost of some of the machines used to produce jewelry are approximately as follows (in U.S. dollars):

Machinery	Cost
Chainmaking	$10,000 to $20,000
Rolling/wire machine	5,000 to 10,000
Stamping	11,000 to 50,000
Casting	3,000 to 4,000
Vacuum casting	20,000

They further cite the lack of development in new technology in the United States on a traditional dependence on casting techniques that developed out of the dentistry industry.

The small size of most firms in Italy limits their ability to market finished products. To alleviate this problem, there is an extensive network of jewelry wholesalers (approximately 16,000) that market products to both domestic and foreign customers. Those firms that directly export reportedly use international trade shows to conduct a significant portion of their business. These shows are viewed as a means to promote the company and to observe market trends in both design and production technology. Research and

development expenditures reportedly range between 1 percent and 3 percent of total sales and are used primarily to develop new technologies and, to a lesser extent, new models and designs. Transportation and insurance costs are usually paid by the customer and have reportedly increased in recent years because of rising insurance premiums. Methods of transportation include air courier (usually protected) and mail shipments. The average delivery time is reportedly between 30 to 60 days from the date of order.

There are a wide range of Italian laws regarding the production and marketing of jewelry, ranging from environmental protection laws to title and trademarking laws. Environmental laws reportedly require that employees provide a work environment that is free from safety and health hazards. These laws are reportedly strict but enforced loosely. Italian marking laws require that a product be engraved with the precious-metal content (fineness) of the alloy used in production and a trademark (consisting of an identification number supplied by the Government) on each piece of jewelry manufactured. Each manufacturer must register with the proper Government authority which, provides them with an authorized stamp for the identification mark. Further, unlike in the United States, Italian precious-metal content marks do not allow for any tolerance around the indicated fineness. Therefore, each piece must meet the minimum standards for a particular quality mark. Italian industry sources indicate that although the laws enforcing these rules are strict, enforcement could be tighter. Most companies indicated that they tested jewelry articles at various stages of production to ensure proper fineness, and that State inspectors periodically visit and test products to ensure compliance. Italian industry representatives indicated that problems with marking and underkaratage are prevalent in all major industries worldwide and suggested that each nation provide stricter control and enforcement of existing laws by establishing official assay offices similar to those in operation in the United Kingdom, Switzerland, and France.

Jewelry manufacturers in Italy must acquire the gold used in jewelry production through a State-controlled monopoly. However, it is reported that this does not pose significant problems in obtaining the metal when needed. Generally, a manufacturer can buy gold outright, lease, or obtain gold through temporary importation. When gold is temporarily imported, manufacturers are required to pay a bond equal to the value of the duty on the gold, which is reportedly refunded when the gold is re-exported. In addition, they must pay an 18-percent value-added tax on their products, however, this is also reportedly refunded when the product is exported. Industry representatives report that when gold is supplied by customers through temporary importation, the only cost of production charged is labor or value added. There is no definitive information on the relative importance of each of these methods of acquiring gold, however, industry representatives report that with regards to most products, except chain, approximately 35 percent is obtained from customers and the remainder is bought or leased. The amount leased has increased to about 30 to 40 percent in recent years. For most chain products, the customer reportedly supplies between 65 percent and 70 percent of the gold and the manufacturer purchases the remainder. Leasing costs reportedly range between 5 and 6 percent of the total gold value, less than the interest rate on money.

Since there are no significant deposits of gold in Italy, all of it must be imported from major world suppliers. Further, since it is controlled by the Government, there are reportedly strict controls to monitor the import and export of gold and gold articles. A company is required to re-export the same

amount of gold imported within a specific time period, less any amount of gold lost in production. An estimated one-third of the total gold imported and made into jewelry is consumed in the local market, and the remaining two-thirds are re-exported.

The Italian Government does, through Customs, allow manufacturers to declare as a loss in production a certain percentage of gold used. The loss stems from the physical working of the gold and is the result of various production processes and procedures. The exact percentage depends upon the fineness of the alloy and the method of production and is between 6 and 10 percent. Generally, the lower the karatage, the higher the loss. Most jewelry articles are allowed a 6-percent loss on temporarily imported gold. The value of loss is calculated into the price of the finished products by most manufacturers. Since the Italian Government is concerned with the volume of gold exported, most manufactures price according to the weight of the product. For example, the price of a product would be determined as follows:

	Weight of product	x	Fineness 1/
+	Weight of product	x	Charge for value added per gram
+	Weight of product	x	Price of gold
			Total price

1/ The fineness used in calculating the price would be adjusted for the percentage of loss in production. If the product was 14k (0.585) and loss amounted to 6 percent, the fineness changed would be 0.622.

The following tabulation summarizes the fineness used in calculating prices, including the amount of loss, assuming a 6-percent loss for most jewelry products, which can be declared by Italian manufactures of precious jewelry:

Karatage	Fineness	Fineness with 6-percent loss
8	333	354.26
9	375	398.94
10	417	443.62
12	500	531.91
14	585	622.34
18	750	797.87
21	875	930.85
22	917	975.53

According to Italian manufactures, they clean their entire production area once or twice per year to reclaim any lost gold and there is no requirement that the amount reclaimed be reported. The reclamation of any lost gold provides an incentive to Italian manufacturers to be efficient because prices can reflect their efficiency.

H.2. Hong Kong

Hong Kong is a prominent manufacturing and trading center in both the costume and precious segments of the jewelry market. The industry producing precious jewelry concentrates on medium-priced products, often set with

gemstones. According to the latest available statistics, estimated 1986 total output of the Kong Kong precious jewelry industry was valued at $419 million, of which exports accounted for approximately 60 percent, or $251 million. Hong Kong exports of precious jewelry, valued at $189 million in 1985, represented 4 percent of world precious jewelry exports in that year. In 1986, exports of precious jewelry accounted for an estimated 63 percent of Hong Kong's total jewelry exports. Of total precious jewelry exports in 1986, an estimated $184 million, or 73 percent, were gemstone articles, and the remaining $67 million, or 27 percent, were precious-metal articles.

The most common items produced in Hong Kong are pendants, necklaces, bracelets, earrings, rings, and brooches. Most of this jewelry is made with gemstones because of the available supply of relatively low-cost labor required to set the stones. Gold is the principal metal used in alloys of various degrees of fineness. Generally, the alloy used will be determined by the market in which the article will be sold. Most raw materials, including gold and gemstones, are imported from Israel, India, Belgium/Luxembourg, and the United States.

Industry sources indicate that the supply and price of raw materials has been stable and is favored by the duty-free status of the Hong Kong port. Further, Hong Kong is mainly competitive in the low-to-medium end of the market because of their lower quality in craftsmanship and design, but has been trying to upgrade into higher quality products. Most producers in Hong Kong use original in-house designs; however, some use those specified by customers. According to the Hong Kong Trade Development Council (TDC), 1/ improvements in original designs have given Hong Kong producers the opportunity to advance in the world marketplace.

The larger Hong Kong producers have automated most of their production processes in recent years to take advantage of worldwide technological developments. However, given the supply of relatively low-cost labor and the small size of many Hong Kong firms, capital-intensive production is not widely used. Most manufacturers prefer to offer the "look" achieved through hand production, especially in finishing operations. Most precious-metal parts are produced in large volumes using the "lost wax" casting method, or are stamped from sheet stock. According to industry representatives, casting and molding machinery is purchased in Hong Kong, Japan, Taiwan, West Germany, and to a lesser extent the United States. Once pieces are formed, they generally undergo hand assembly and finishing operations, including stone setting, polishing, and electroplating. Once the metal components are assembled and polished, they receive a thin electroplating to bring out the shine. Gold, silver, and nickel are the most frequently used plating materials.

1/ The Hong Kong TDC has coordinated trade promotion activities for Hong Kong industries since it was established in September of 1966. The statutory functions of the TDC are "(a) to promote, assist and develop Hong Kong's overseas trade, with particular reference to exports; and (b) to make such recommendations to the Government as it sees fit in relation to any measures which it considers would achieve an increase in Hong Kong's trade." The TDC maintains 20 overseas offices and its sources of revenue are as follows: "(a) the net proceeds of an ad valorem levy on exports and imports other than foodstuffs; and (b) minor income from miscellaneous sources such as advertising fees." The net proceeds of the levy provided 89.3 percent of the Council's revenue for 1985. Hong Kong Trade Development Council Annual Report and Accounts, 1984/1985, pp. 5-6.

According to Hong Kong trade publications, the jewelry industry is best known for being able to supply quality products at competitive prices. They further claim their industry's competitive advantage over European and American manufacturers is based on cost, whereas its advantage over other Asian countries stems from product quality through craftsmanship.

On the basis of data furnished by the Hong Kong Census and Statistics Department, estimated producers' shipments of the Hong Kong precious jewelry industry during 1982-86 was as follows (in millions of U.S. dollars):

Year	Value of producers' shipments	Index 1/	Precious-metal jewelry shipments	Index 1/	Ratio of precious metal to total
1982....	341.3	100.0	273.0	100.0	80
1983....	295.4	86.6	242.2	88.7	82
1984....	328.5	96.2	239.8	87.8	73
1985....	331.2	97.0	258.3	94.6	78 2/
1986....	418.5	122.6	330.6	121.1	79 2/

1/ 1982=100.0.
2/ Estimated.

Producers' shipments decreased 13 percent during 1982-83 and then increased 9 percent per year to $419 million in 1986. The reduction in output in 1983 reflects a worldwide decline in jewelry demand as a result of economic recession in major world markets and high gold prices.

The total number of Hong Kong establishments and persons employed in the precious jewelry industry during 1982-86 were as follows:

Year	Establishments	Employees	Employees per establishment
1982.....	738	8,830	12.0
1983.....	718	8,651	12.0
1984.....	713	9,725	13.6
1985.....	715	10,156	14.2
1986.....	769	11,296	14.7
Absolute change, 1986 from 1982..	31	2,466	2.7
Percentage change, 1986 from 1982..	4.2	27.9	22.5

The total number of establishments producing precious jewelry decreased from 738 in 1982 to 713 in 1984. It has since increased by 8 percent to 769 in 1986. The industry is primarily composed of small firms. Many Hong Kong producers utilize an extensive network of subcontractors who perform limited but integral roles in the production of jewelry. Most of these small factories perform subcontract work for large producers and also produce medium- to high-priced pieces for local jewelry retail shops. The smallest shops, those with less than 10 workers, reportedly specialize in jewelry repair, alteration, and gemsetting. According to information supplied by the Hong Kong Census and Statistics Department, approximately 42 percent of the

firms producing precious jewelry in 1984 employed fewer than five workers; another 43 percent employed 5 to 20 workers; 13 percent had between 21 and 100 workers; and 2 percent had over 100 workers. The relative small size of most Hong Kong firms allows them to be flexible in switching production lines to and from jewelry articles as required. In terms of shipments, the five largest firms reportedly account for between 40 and 50 percent of the total industry output. Production statistics regarding subcontractors or their work are not available. In general, subcontracting work includes mold preparation, casting, metal processing, stone setting, polishing, and electroplating. Most of the workshops are family-owned operations and do not engage in the marketing or exporting of their own products. Generally, they produce items under special order from foreign as well as local buyers.

Total employment in the precious jewelry industry declined from 8,830 workers in 1982 to 8,651 workers in 1983. Such employment then rose by 31 percent to 11,296 in 1986. After an initial decline in the number of establishments in 1983, and a slight drop in employment, the average number of employees per establishment rose to nearly 15 in 1986. This reportedly reflects the consolidation of the industry in the early 1980's as a result of recession in world jewelry markets and domestic economic instability. The workforce primarily consists of skilled craftsmen, skilled and unskilled workers, designers, technicians, and gemologists. The division of labor is more defined in larger firms where workers reportedly specialize in one task. The average on-the-job training period for most jobs lasts for a minimum of 6 months and can be as long as 5 years. A jewelry worker's union has existed in Hong Kong for about 35 years and currently has a membership of approximately 700. Local industry representatives estimate the average wages paid to highly skilled workers range from $12,000 to $15,000 per year; for semiskilled workers, from $6,000 to $8,000 per year; and for unskilled workers, approximately $2,000 per year.

Currently, there reportedly exists a shortage of experienced skilled craftsmen because of the lack of formal apprentice programs or organized training and the high mobility of workers into and out of jewelry production. Although some manufacturers have turned to entering into production arrangements with China, the extent of this practice is not known. Locally, the Hong Kong Government in 1982 established a Vocational Training Council and Technical Education and Industrial Training Department in order to ensure that Hong Kong has a comprehensive system of technical education and industrial training suited to its developing needs. In connection with this, a training board for the jewelry industry was established to determine the manpower needs of the industry, prescribe job standards, design training programs, examine financing industrial training, and act as a liaison with the industry, training centers, educational institutions, and Government departments. Certain educational institutions currently offer programs in a variety of jewelry applications, including jewelry design and making.

Hong Kong precious jewelry producers are also required to comply with the laws of Hong Kong regarding water and air pollution control and waste disposal ordinances 1/. These laws reportedly affect large factories more than small ones because of the volume of waste that they generate. According to discussions with industry representatives and Government officials,

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1/ Laws of Hong Kong: Air Pollution Control Ordinance, ch. 311; Water Pollution Control Ordinance, ch. 358; and Waste Disposal Ordinance, Ch. 354.

enforcement of these ordinances are less stringent at the present time because of the low priority given to environmental issues. However, should these issues become important, it is expected that relevant ordinances would be strictly enforced.

Since most Hong Kong companies are small, very few firms can sustain a direct sales force. In general, local companies sell to local agents, who in turn deal with foreign buyers. Local agents procure goods from a number of different suppliers in order to obtain a diversified line of products at various price points. These goods are then combined and presented to buyers at domestic and foreign trade shows, which are primarily used by agents to meet buyers. The high cost of space at many shows prohibit small producing firms from individual exhibition; therefore, most exhibitors are agents. Local trade shows also offer buyers the opportunity to visit suppliers and view new products or designs.

Exports account for an estimated 60 percent of the total output. Hong Kong exports of precious jewelry articles almost doubled from $133 million in 1982 to $251 million in 1986. The United States was the leading market for such exports over the period as its share of total exports increased from 48 percent in 1982 to 63 percent in 1985 and then dropped slightly to 56 percent in 1986. The total value received by the United States more than doubled, from $65 million in 1982 to $141 million in 1986. Japan was the second leading market in 1986, receiving 20 percent of total exports, or $52 million; and Canada was third, receiving 4 percent of total exports, or $10 million. Approximately 80 percent of Hong Kong precious jewelry exports are, to some extent, made of precious metal, and the remainder are made of gemstones. Italy was the largest supplier of precious jewelry to Hong Kong in 1986, accounting for 37 percent of total imports (primarily chain), followed by China with 20 percent. The United States was the third leading supplier, accounting for 10 percent of total imports in 1986. Local industry sources indicated that imports from China were primarily assembled parts and components for re-export.

The following tabulation presents Hong Kong's trade picture during 1982-86:

Year	Value of exports Million dollars	Index 1/	Value of imports Million dollars	Index 1/	Trade surplus Million dollars
1982....	133.1	100.0	130.1	100.0	3.0
1983....	141.8	106.5	101.1	77.7	40.7
1984....	180.7	135.8	109.6	84.2	71.1
1985....	188.8	141.8	128.2	98.5	60.6
1986....	251.1	188.7	141.9	109.1	109.2

1/ 1982=100.0.

H.3. Switzerland

According to Commission questionnaire respondents, the bulk of U.S. imports from Switzerland are accounted for by precious-metal watchbands, which are attached to high-priced watches. The jewelry-producing industry

reportedly specializes in high value-added products with good quality finishes and classic designs. They do not attempt to compete in mass-produced items with low margins. Jewelry production in Switzerland is concentrated either at the high end of the price range (labor-intensive, high-quality, high value-added), or in the medium-price range capital-intensive items where the Swiss use a combination of automation and skilled labor. In the lower price range, imports account for about 80 percent of sales. Italy reportedly dominates the market in gold chains and is very competitive in other areas, primarily because of design. In recent years, Italy has reportedly lost market share to West Germany, which is said to provide better quality products and faster service, and to Asian countries, which reportedly offer lower prices. Most domestic production comes from a number of skilled craftsmen working independently and using original designs; however, some articles are produced from designs supplied by customers. Industry sources indicate that Swiss producers benefit from high productivity (fewer holidays, shorter vacations, and longer hours), lower social costs, and greater use of skilled labor.

In 1985, an estimated 625 Swiss firms were registered as producing precious jewelry. The five largest firms accounted for approximately 12 percent of total production. Estimated production of precious jewelry fluctuated during 1982-86 but increased overall 15 percent to $429 million, or by 4 percent per annum. Precious-metal jewelry accounted for a decreasing share of total production during the period as it declined from 97 percent to 93 percent.

Exports appear to be greater than total production because, as industry sources explain, Swiss trade statistics include the temporary movement of jewelry through major auction houses. Much of this jewelry is imported, sold, and re-exported. Swiss exports of precious jewelry fluctuated during the period and registered a slight overall decline to $475 million. France, the United States, and the United Kingdom were the major markets in 1986, accounting for 19 percent, 14 percent, and 10 percent, respectively. Swiss imports of precious jewelry rose 29 percent during 1982-84 before dropping 20 percent in 1985. In 1986, they recovered some of their losses and amounted to $669 million. The major suppliers of precious jewelry to Switzerland in 1986, according to the statistics, were France, West Germany, and Italy, accounting for 18 percent, 17 percent, and 17 percent, respectively. Industry sources, however, estimate the relative position of these three suppliers to be Italy (30 percent), West Germany (20 percent), and France, a distant third. These estimates are based on their experience in the overall market, including the number of foreign representatives that have contacted them. Italian products reportedly concentrate on fashionable items and compete in the low- and medium-priced segment of the market, whereas West German products tend to be in the medium- to high-priced range. French products are reportedly more classically designed pieces in all price ranges. The United States accounts for an estimated 5 percent of total imports and is not considered a major source.

Popular products produced domestically include rings and earrings. Switzerland is reportedly self-sufficient in both plain gold rings and those set with stones. In the medium-priced range, the Swiss produce gold rings, watch cases, watchbands, and earrings using automated equipment. Industry sources also indicated that some production is conducted in nearby Pforzheim, West Germany, where there are reportedly lower production costs and benefits from economies of scale.

There are an estimated 4,000 production workers employed in the jewelry industry in Switzerland, and the average work week is 42 hours. According to the Swiss metal and watchmaker union, average hourly wages of production workers are approximately $11.50, and those for all workers are approximately $9.50. These figures reportedly do not include "social costs" to the employer which range between an additional 15 to 20 percent. One industry representative estimated that the average wage for a skilled craftsman in jewelry production, including social costs, is approximately $27.50 to $33.00 per hour.

Switzerland has traditionally been an important turntable for the jewelry trade because of its liberal trade policy, relatively low value-added sales tax and customs duty, no luxury tax, and a reliable banking system. The export oriented Swiss Government encourages this trade. For example, the Swiss import tax on jewelry is 10 percent, compared with 30 percent in Austria, and if the article is re-exported the tax is refunded. It is interesting to note that the average tourist tends to buy watches rather than jewelry while the average domestic consumer prefers jewelry. An estimated 20 percent of new jewelry sales are reportedly to tourists who take the items when they leave. Traditionally, approximately 60 percent of tourist purchases are watches. However, as a result of the advance of quartz technology and the temporary decline of the Swiss watch industry, that ratio has declined to about 50 percent.

H.4. Thailand

Thailand's jewelry industry is closely associated with its gemstone industry. Thailand has long been an important exporter of gemstones, particularly rubies and blue sapphires, and it is rapidly becoming a significant manufacturer and exporter of finished jewelry. Thai exports of gemstones increased 16 percent, from $202 million in 1982 to $234 million in 1985. 1/ However, export growth in recent years has shifted away from cut and unset stones to finished jewelry, most of which is exported to the United States, Japan, and Hong Kong. Exports of finished jewelry have more than tripled, from $26 million in 1982 to $80 million in 1985. Of the precious jewelry produced in Thailand, most incorporating small gemstones, the relative share accounted for by gold, has steadily risen from 62 percent in 1982 to 78 percent in 1985, or by 5 percent per year. Thai craftsmen traditionally produce high-priced pieces for Thai royal families; however, exported products are mainly in the medium-price range, retailing for $100 to $1,000 per piece. Industry sources indicate that Thailand's competitiveness is based on low labor costs and relatively abundant supplies of raw materials. Most of the products reportedly incorporate small gemstones and are of the type generally sold in catalog showroom outlets.

1/ It should be noted that Thai export statistics are based on recorded export values and reportedly, significantly understate the amount actually exported. This is due in part to a tendency of jewelry exporters to understate their actual sales for tax reasons, but mainly to the ease with which gemstones and jewelry are carried across borders without being recorded by customs officials. According to Thai officials, the actual value of gemstones and jewelry taken out of the country by tourists and others are estimated to be double the amount shown in Government export statistics.

The trend toward increasing exports of finished jewelry has reportedly been aided by several factors. First, the Thai Government has reportedly provided incentives to both foreign and local investors in export-oriented jewelry production by allowing 100 percent foreign ownership and rights to import 99.9 percent pure gold. Second, preferential duty rates through programs like the GSP in most of the major world markets have helped Thai jewelry become highly price competitive in these markets. Finally, Thailand's increasing comparative advantage in labor costs (reportedly 30 percent cheaper than in Hong Kong) and in supplies of gemstones have increasingly become important stimulants to jewelry exports.

The Thai industry consists of two main types of operations. The first group consists of Government-promoted companies. The majority of these are joint ventures, or wholly foreign-owned companies, several of which belong to U.S.-based jewelry retail store chains or to foreign wholesalers. These firms are generally more capital intensive than their local counterparts and usually employ the "lost-wax" production method. The second group of producers is composed of traditional Thai jewelers and includes thousands of small-scale Thai-owned operations. Jewelry in these shops is usually made by hand from simple hand tools. These shops are primarily family-owned and together reportedly account for the bulk of production volume and cater to a large number of independent foreign buyers. An increasing number of Thai producers are employing more modern techniques that should enable them to mass produce fine jewelry of uniform quality.

Since Thailand has no domestic deposits of gold, which accounts for approximately 50 percent of the total cost of its finished jewelry, problems in acquiring it have reportedly been the largest factor in inhibiting even greater growth of the industry. For Government-promoted companies, complex procedures of importing gold lead to delays in the filling of orders with the average time of delivery being approximately 60 days. Some of the small shops reportedly obtain the gold they use in production from smugglers, and it is often of uncertain purity. In an attempt to alleviate some of these difficulties, the Thai Government is reportedly considering measures that would simplify gold import procedures. The key factor concerning the Government is that all imported gold that is designated for jewelry export production actually gets re-exported. Leakage of gold into the local market, it is argued, could undermine the strength of Thailand's national currency.

Thai exports of gemstones and jewelry to the United States in 1985 were valued at $101 million, more than double the value of exports to Japan, the second leading market. Hong Kong, Switzerland, and West Germany were the third, fourth, and fifth largest markets in 1985, receiving 14 percent, 10 percent, and 4 percent, respectively. Whereas exports of gemstones to the United States rose an average of 24 percent per year, exports of finished jewelry rose at an annual rate of 72 percent. The share of exports accounted for by finished jewelry relative to the total for gemstones and jewelry, rose annually from 16 percent in 1982 to 42 percent in 1985.

H.5. France

There are approximately 3,000 French firms that produce precious jewelry and it is estimated that approximately 40 percent of the total output is exported. The industry is dominated by small firms, evidenced by the fact that the five largest firms account for approximately 20 percent of the total

output, and the average number of employees per firms is approximately 10. An estimated 95 percent of total precious jewelry production is accounted for by precious-metal jewelry, and approximately 75 percent of that is accounted for by gold jewelry. Estimated sales of precious jewelry increased 7 percent, from $610 million in 1984 to $651 million in 1985.

Total employment in the precious jewelry industry is estimated to be approximately 30,000 workers of which approximately 24,000, or 80 percent, are production workers. Estimated hourly wages in the industry for a production worker is approximately $6 and the average workweek lasts 39 hours.

France was ranked the fourth largest exporter of precious jewelry to world markets in 1985 and accounted for 6 percent of the total world exports. According to official trade statistics, exports of precious jewelry increased 95 percent, from $74 million in 1982 to $144 million in 1986. Switzerland was the largest market for such exports, receiving approximately 50 percent of the total in 1985. Saudi Arabia was a distant second, receiving approximately 7 percent of the total. Exports to the United States decreased by more than one-half, from $29 million in 1984 to $14 million in 1985. France was a net supplier of precious jewelry to world markets as French exports amounted to only $131 million, leaving a net surplus of $13 million.

French law reportedly requires precious-metal jewelry produced in France be labeled as to the precious-metal content. This can be done either by stamping the piece with the appropriate karatage, or by stamping it with the appropriate precious-metal content expressed in parts per thousand. In practice, the latter is more common than the former. French law also requires that all precious-metal jewelry be stamped or permanently marked with the trademark of the manufacturer. The French Government has established an official assay office to guarantee the precious-metal content of both imported and domestically produced products.

H.6. United Kingdom

There are an estimated 1,700 firms in the United Kingdom that produce precious jewelry, and it is estimated that approximately 5 percent of these employ more than 35 workers. In addition, it is estimated that approximately 100 firms account for 50 percent of the industry's total output, of which approximately three-fourths is exported. Jewelry production has been, and continues to be, considered a craft and has only recently begun to transform itself into a coordinated industry. The industry is highly fragmented with many manufacturers importing to supplement their own production, maintaining manufacturing facilities overseas, being involved in wholesaling or retailing, and handling watches and other goldsmith's products. An estimated 95 percent of the market is accounted for by precious-metal jewelry.

The United Kingdom was ranked from the third to the fifth largest exporter of precious jewelry during 1981-85 and accounted for an estimated 5 percent of world exports in 1985. According to official trade statistics, exports of precious jewelry more than doubled, from $216 million in 1982 to $442 million in 1984. After a 50-percent decline in 1985, such exports rebounded to $334 million in 1986, or overall by 55 percent. France was the leading market for such exports in 1982, receiving 28 percent of the total, however, by 1986, the French share of such exports dropped to 6 percent. In 1986, Brunei was the leading market, receiving 36 percent of total British

exports; Switzerland was the second leading market, receiving 14 percent; and the United States was third, receiving 13 percent of the total exports.

Italy was the largest supplier of precious jewelry to the United Kingdom in 1986, accounting for 17 percent of the total British imports. France was a distant second accounting for 5 percent. Switzerland was the third leading supplier with 4 percent, and the United States was fourth with 2 percent. According to the latest available information, the number of production workers producing precious jewelry steadily declined from 17,300 in 1981 to 14,100 in 1984, and the average workweek lasts 38 hours. Average minimal wages of production workers in the jewelry industry are approximately $5 per hour.

After a deep recession during the early 1980's, British jewelry manufacturers are taking steps to improve productivity and profitability. Improvements are being centered on better designs, training of young designers, and providing increased opportunities to young designers who can utilize their skills. Reportedly, there have been few original British designs in the past 5 years. In addition to the improvements in British manufacturing, the marketing and retailing sectors have also undergone change. Refurbishing of jewelry outlets reportedly has been completed by most of the major outlets and should lead to increased profits. It is also reported that Government support exists to the extent of providing training schemes and research to aid the manufacturer in identify areas in which they must improve.

Before entering the market, both imported and domestic products containing precious metals must pass through one of the official assay offices to have the article hallmarked. This procedure tests and certifies the precious-metal content (karatage). By law, gold weighing 1 gram or more is required to be hallmarked. It is reported that 9K gold represents 88 percent of the market, 14K is negligible, and 18K and 22K account for the remaining 12 percent. The hallmark includes the trademark of the manufacturer, standard or fineness mark, assay office mark, and a date letter to indicate the year of hallmarking. There are four assay offices in the United Kingdom: London, Birmingham, Sheffield, and Edinborough. Technical services offered by the assay office include the testing of finished and semifinished products, analysis of clean samples of bullion, melting or casting of clean gold or silver into bars, assaying and issuance of certificates of analysis for bullion bars, analysis of sweepings or scrap for production or quality control purposes, and analysis of plating thicknesses of articles that have been determined in accordance with British and international standards procedures.

H.7. Spain

According to the Spanish National Institute of Statistics, the number of precious jewelry producers in Spain increased from approximately 500 in 1982 to approximately 800 in 1983, and it is estimated that two-thirds of total output is exported. The industry concentrates on medium-priced products constructed from a variety of materials, which is represented by the fact that approximately 65 percent of total precious jewelry production is accounted for by precious-metal jewelry.

An estimated 55 percent of the total cost of precious jewelry in Spain is accounted for by raw materials, and an additional 37 percent is accounted for by labor. There exists a network of subcontracting services for producers that accounts for approximately 6 percent of the total cost. According to official statistics, the total cost of producing precious jewelry increased 35 percent, from 1982 to 1983, in terms of local currency; however, translated into U.S. dollars, the increase was a slight 3 percent.

Total employment in the precious jewelry industry, according to the Spanish National Institute of Statistics, rose 16 percent, from 6,369 workers in 1982 to 7,293 workers in 1983. Production workers accounted for an estimated 70 percent of total employment in 1983. Further, over two-thirds of all employees were devoted to the production of precious-metal jewelry in 1983. Estimated hourly wages in the precious jewelry industry rose 24 percent, from $2.87 in 1982 to $3.57 in 1986.

Spain was the ninth largest exporter of precious jewelry to world markets in 1985 and accounted for 2 percent of the total world exports. According to official trade statistics, domestic exports of precious jewelry increased 55 percent, from $74 million in 1982 to $114 million in 1986. Exports to the United States fluctuated during the period but is estimated at $24 million in 1986, 21 percent of total exports and triple the value in 1982. Switzerland was the second leading market, receiving approximately 15 percent of the total exports, and the United Kingdom was the third, receiving approximately 10 percent.

Spanish law does not require that precious-metal jewelry produced in Spain be labeled in any way to denote Spanish origin. However, all precious-metal jewelry manufactured in Spain must be marked as to the precious-metal content. This can be done either by stamping the piece with the appropriate karatage, or appropriate decimal equivalent expressed in parts per thousand. In practice, the latter is more common than the former. Spanish law also requires that all precious-metal jewelry be stamped with the trademark of the manufacturer.

Trademarking and precious-metal content requirements in Spain date back to the 1930's. In 1985, the Spanish Government reportedly enacted a law which tightened the requirements of old laws and requires that all pieces of precious-metal jewelry be taken to an "authorized" lab where their precious-metal content would be analyzed and the appropriate mark be stamped on the piece by the lab. Each piece taken to the lab, however, must have the trademark of the manufacturer on it. Some of the "authorized" labs reportedly are Government labs and others are private that have received Government authorization to certify precious-metal content.

Appendix I

Distribution of Gold Jewelry Purchases in Selected World Markets, by Karatage

Table I-1
Distribution of items purchased in selected world markets, by karatage

Market	8K	9K	10K	14K	18K	22K	24K	Don't know
	(Percent)							
Austria	1	1	-	35	17	2	-	44
France	-	-	-	-	99	1	-	-
West Germany	22	3	-	49	7	4	-	15
Italy	-	-	-	-	100	-	-	-
Switzerland	1	-	-	1	80	4	-	14
United Kingdom	1	37	-	2	12	3	-	45
United States	-	-	13	79	4	-	-	4
Canada	-	-	54	34	6	-	3	3
Japan	-	2	-	4	80	2	6	6
Hong Kong	-	-	-	5	10	-	82	3
Average per market	1/ 6	1/ 11	1/ 34	1/ 26	42	1/ 3	1/ 30	1/ 17

1/ Includes only those markets where information was available.

Source: Gold Jewelry Markets International Review, International Gold Corporation, Ltd., March 1985, p. 46

Appendix J

Distribution of Gold Jewelry Purchases in Selected World Markets, by Color of Gold

Table J-1
Distribution of items purchased in selected world markets, by color of gold

Market	Yellow	White	Mixed	Don't know
	(Percent)			
Austria	61	23	4	12
France	83	11	6	-
West Germany	78	14	7	1
Italy	70	7	2	21
Switzerland	72	16	7	5
United Kingdom	71	4	2	23
United States	89	4	4	3
Canada	93	4	2	1
Japan	1/	1/	1/	1/
Hong Kong	94	5	1	-
Average per market	79	10	4	2/ 9

1/ Not available.
2/ Includes only those markets where information was available.

Source: Gold Jewelry Markets InternationalReview, International Gold Corporation, Ltd., March 1985, p. 47

Appendix K

Assessment by U.S. Producers, Importers, and Purchasers of the Competitive Position of Domestically Produced Precious Jewelry Versus that of Foreign-Made Products, by Selected Competitive Factors

Table K-1
Assessment of competitive position by U.S. producers, importers, and purchasers, of domestically produced precious jewelry versus that imported, by types of respondent and competitive factors

(In percent)

Country with advantage 1/	Overall advantage	Lower price	Various price points	Product quality	Product design	Overall availability	Shorter delivery time	Supplier relationship
				Producers				
Domestic (D).....	24	11	42	49	42	65	86	70
Foreign (F).....	59	58	28	28	37	14	7	8
Equal (S).....	17	31	29	23	21	21	7	22
				Importers				
Domestic (D).....	41	23	33	26	23	51	65	36
Foreign (F).....	40	39	43	53	58	34	18	32
Equal (S).....	19	38	24	21	19	15	17	32
				Purchasers				
Domestic (D).....	75	66	68	67	65	86	93	86
Foreign (F).....	17	27	15	20	24	6	2	2
Equal (S).....	8	7	17	13	11	8	5	12

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

Source: Compiled from information submitted in response to Commission questionnaires.

Table K-2
Assessment of the overall competitive position by U.S. producers, importers, and purchasers, of domestically produced precious jewelry versus that imported, by selected countries

(In percent)

	Distribution of responses indicating overall competitive advantage of U.S.-made precious jewelry versus products made in--1/														
	Italy			Hong Kong			Israel			Switzerland			Other		
Product	D	F	S	D	F	S	D	F	S	D	F	S	D	F	S
Rings.....	53	34	13	29	57	14	60	21	19	62	7	31	34	43	23
Earrings.....	45	40	15	41	49	10	65	18	17	70	0	30	35	50	15
Neckwear.....	19	78	3	36	52	12	46	33	21	70	0	30	36	40	24
Religious articles....	48	40	12	61	35	4	65	20	15	75	0	25	53	29	18
Findings.....	64	25	11	51	43	6	76	17	7	71	0	29	64	23	13
Clasps.....	44	37	19	47	37	16	73	17	10	65	9	26	58	23	19
Other jewelry articles....	32	54	14	33	57	10	36	55	9	20	20	60	25	37	38

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

Source: Compiled from information submitted in response to Commission questionnaires.

Table K-3
Assessment of the ability to supply products at various price points by U.S. producers, importers, and purchasers, for domestically produced precious jewelry versus that imported, by selected countries

(In percent)

	Distribution of responses reflecting the ability to supply products at various price points between U.S.-made precious jewelry and products made in--1/														
	Italy			Hong Kong			Israel			Switzerland			Other		
Product	D	F	S	D	F	S	D	F	S	D	F	S	D	F	S
Rings.....	52	25	23	30	41	29	65	11	24	65	4	30	33	33	34
Earrings.....	48	29	23	41	38	21	67	14	19	67	9	24	31	44	25
Neckwear.....	25	50	25	34	41	25	62	20	18	65	10	25	31	38	31
Religious articles....	51	27	22	56	30	14	68	13	19	74	0	26	45	26	29
Findings.....	57	20	23	49	34	17	70	15	15	63	6	31	61	18	21
Clasps.....	54	22	24	46	40	14	70	15	15	55	17	28	54	25	21
Other jewelry articles....	34	43	23	33	53	14	40	50	10	40	20	40	24	41	35

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

Source: Compiled from information submitted in response to Commission questionnaires.

Table K-4
Assessment of product quality by U.S. producers, importers, and purchasers, for domestically produced precious jewelry versus that imported, by selected countries

(In percent)

Product	Distribution of responses indicating an advantage due to product quality of U.S.-made precious jewelry versus products made in--1/														
	Italy			Hong Kong			Israel			Switzerland			Other		
	D	F	S	D	F	S	D	F	S	D	F	S	D	F	S
Rings.....	29	46	25	46	28	26	69	8	23	57	13	30	37	37	26
Earrings.....	32	45	23	58	21	21	78	8	14	53	16	31	34	44	22
Neckwear.....	9	78	13	49	28	23	62	19	19	61	17	22	37	42	21
Religious articles....	31	53	16	78	15	7	78	9	13	55	17	28	47	34	19
Findings.....	42	42	16	76	14	10	85	11	4	43	21	36	64	22	14
Clasps.....	35	45	20	72	19	9	85	11	4	44	31	25	61	21	18
Other jewelry articles....	18	68	14	52	34	14	36	36	28	0	60	40	18	70	12

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

Source: Compiled from information submitted in response to Commission questionnaires.

Table K-5
Assessment of product design by U.S. producers, importers, and purchasers, for domestically produced precious jewelry versus that imported, by selected countries

(In percent)

Product	Distribution of responses indicating an advantage due to the product design of U.S.-made precious jewelry versus products made in--1/														
	Italy			Hong Kong			Israel			Switzerland			Other		
	D	F	S	D	F	S	D	F	S	D	F	S	D	F	S
Rings.....	25	58	17	36	44	20	66	8	26	57	4	39	35	44	21
Earrings.....	23	59	17	50	37	13	74	9	17	50	10	40	38	47	15
Neckwear.....	5	90	5	40	45	15	61	17	22	58	5	37	36	50	14
Religious articles....	32	56	12	68	21	11	71	10	19	58	5	37	53	33	14
Findings.....	41	44	15	56	24	20	77	11	12	47	6	47	62	23	15
Clasps.....	28	55	17	52	30	18	77	11	12	35	24	41	58	27	15
Other jewelry articles....	24	68	8	43	52	5	36	36	28	20	20	60	23	71	6

1/ Respondents were asked to mark "D" if the domestic product typically enjoyed a competitive advantage, "F" if the foreign product enjoyed the advantage, or "S" if the domestic and foreign products were typically equal in an area.

Source: Compiled from information submitted in response to Commission questionnaires.

Appendix L

U.S. Producer Price and Import Price Indexes

Table L-1
U.S. producer price indexes for all commodities, miscellaneous products, and jewelry (platinum and karat gold, and other precious), by quarters, 1982-86

(April-June 1983=100.0)

Period	All commodities, except farm products	Miscellaneous products	Jewelry, platinum and karat gold	Other precious metal jewelry
1982:				
January-March.....	98.9	94.4	90.1	99.9
April-June.....	98.8	94.7	85.2	100.8
July-September.....	99.6	95.7	91.7	98.7
October-December.....	100.0	99.8	99.8	100.0
1983:				
January-March.....	99.9	99.9	105.0	100.0
April-June.....	100.0	100.0	100.0	100.0
July-September.....	100.9	101.4	99.7	100.2
October-December.....	101.3	101.4	97.1	99.2
1984:				
January-March.....	102.3	102.5	96.6	100.1
April-June.....	103.1	102.6	95.6	101.0
July-September.....	103.0	103.4	94.1	101.9
October-December.....	103.0	103.2	93.2	101.9
1985:				
January-March.....	102.8	104.4	91.6	101.9
April-June.....	103.2	104.8	93.4	102.2
July-September.....	102.8	105.6	92.4	102.7
October-December.....	103.2	105.8	92.2	102.7
1986:				
January-March.....	101.7	106.8	93.2	103.6
April-June.....	99.7	106.8	93.8	104.4
July-September.....	99.1	107.7	96.4	101.5
October-December.....	99.4	108.0	99.1	102.9

Source: Bureau of Labor Statistics, U.S. Department of Commerce.

Table L-2
Import price indexes for jewelry and objects of precious and semiprecious materials, precious jewelry, and for all import commodities (except fuel and related products), by quarters, 1982-86

(April-June 1983=100.0)

Period	All commodities, except fuel and related products	Jewelry objects of precious and semiprecious materials	Import selling prices of precious jewelry
1982:			
January-March.....	1/	1/	101.0
April-June.....	1/	1/	102.6
July-September.....	98.3	1/	104.9
October-December....	98.1	1/	95.6
1983:			
January-March.....	99.1	1/	97.3
April-June.....	100.0	100.0	100.0
July-September.....	99.6	95.1	97.3
October-December....	100.1	94.1	86.4
1984:			
January-March.....	100.9	97.2	80.6
April-June.....	101.4	95.8	83.7
July-September.....	99.6	91.8	79.7
October-December....	99.2	88.7	72.2
1985:			
January-March.....	97.0	1/	76.0
April-June.....	97.3	100.0	74.5
July-September.....	97.7	101.0	70.8
October-December....	99.9	105.3	65.2
1986:			
January-March.....	103.4	110.0	85.7
April-June.....	104.6	110.7	79.8
July-September.....	107.6	126.9	82.1
October-December....	108.3	125.6	74.2

1/ Not available.

Source: Import price index of all commodities, except fuel and related products, and jewelry objects of precious and semiprecious materials provided by the Bureau of Labor Statistics; import selling price index of precious jewelry calculated from responses to 5 questionnaires of the U.S. International Trade Commission.

Table L-3
Price indexes of precious metals, refined good, and refined silver, by quarters, 1982-86

(April-June 1983=100.0)

Period	Precious metals	Gold, refined, troy ounce	Silver, troy ounce
1982:			
January-March.....	82.8	85.4	64.6
April-June.....	74.8	77.9	53.7
July-September.....	84.6	89.2	61.4
October-December....	98.4	101.2	82.2
1983:			
January-March.....	109.4	111.2	101.5
April-June.....	100.0	100.0	100.0
July-September.....	97.7	97.3	99.2
October-December....	89.0	91.2	76.3
1984:			
January-March.....	87.2	89.1	74.1
April-June.....	86.7	88.0	73.9
July-September.....	78.4	80.9	61.2
October-December....	76.8	79.2	59.0
1985:			
January-March.....	67.1	69.5	50.0
April-June.....	71.9	75.1	51.9
July-September.....	71.4	75.0	50.5
October-December....	71.7	75.3	50.0
1986:			
January-March.....	74.2	79.2	48.3
April-June.....	75.1	80.4	42.5
July-September.....	82.0	88.7	43.7
October-December....	87.7	95.1	45.6

Source: Precious metal and gold indexes provided by the Bureau of Labor Statistics; silver price index provided by International Financial Statistics, International Monetary Fund.

Appendix M

Exchange Rate Indexes

Table M-1.—Exchange rates 1/: Nominal-exchange-rate equivalents of selected currencies in U.S. dollars, real-exchange-rate equivalents, and producer price indicators in specified countries, 2/ indexed by quarters, January 1983-December 1986

Period	France		Hong Kong 4/	Israel		Italy	
	Nominal-exchange-rate index	Real-exchange-rate index 3/	Nominal-exchange-rate index	Nominal-exchange-rate index	Real-exchange-rate index 3/	Nominal-exchange-rate index	Real-exchange-rate index 3/
	—US dollars/franc—		-US dollars/HK$-	US dollars/shekel		—US dollars/lira—	
1983:							
January-March.....	100.0	100.0	100.0	100.00	100.0	100.0	100.0
April-June.....	92.2	93.9	94.1	84.56	102.5	94.7	96.0
July-September.....	86.5	89.4	87.5	66.12	99.1	88.9	91.3
October-December.....	84.3	88.5	83.5	1.09	94.6	86.1	90.9
1984:							
January-March.....	82.9	88.6	84.7	28.10	94.6	84.2	90.7
April-June.....	82.7	89.6	84.5	19.08	93.5	83.5	91.4
July-September.....	76.9	84.6	84.2	11.79	91.9	77.8	86.4
October-December.....	73.6	81.9	84.4	6.81	89.8	74.0	84.0
1985:							
January-March.....	69.1	78.4	84.6	5.01	83.9	69.2	80.9
April-June.....	73.2	84.2	84.9	3.62	82.3	71.0	84.7
July-September.....	79.3	91.9	84.8	2.47	81.2	73.8	88.6
October-December.....	87.3	99.2	84.6	2.48	87.1	79.9	96.2
1986:							
January-March.....	95.5	109.4	84.6	2.47	92.0	87.6	106.4
April-June.....	96.3	111.0	84.6	2.47	98.4	90.9	110.7
July-September.....	101.6	116.9	84.6	2.46	101.7	97.5	118.1
October-December.....	104.8	5/	85.0	2.46	104.4	100.7	5/

See footnotes at end of table.

Table M-1.—Exchange rates 1/: Nominal-exchange-rate equivalents of selected currencies in U.S. dollars, real-exchange-rate equivalents, and producer price indicators in specified countries, 2/ indexed by quarters, January 1983-December 1986—Continued

Period	Switzerland		Thailand		United Kingdom		West Germany	
	Nominal-exchange-rate index	Real-exchange-rate index 3/	Nominal-exchange-rate index	Real-exchange-rate index 3/	Nominal-exchange-rate index	Real-exchange-rate index 3/	Nominal-exchange-rate index	Real-exchange-rate index 3/
	—US dollars/franc—		—US dollars/baht—		US dollars/pound		—US dollars/mark—	
1983:								
January-March.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
April-June.....	97.1	97.4	100.0	100.5	101.5	103.2	96.9	97.0
July-September....	93.8	93.9	100.0	101.3	98.6	100.0	91.1	91.0
October-December..	93.4	93.3	100.0	100.9	95.9	98.1	89.9	89.9
1984:								
January-March.....	91.7	91.9	100.0	96.7	93.6	96.4	89.1	89.0
April-June.....	89.7	90.1	100.0	95.1	91.2	95.4	88.9	88.8
July-September....	82.6	83.6	100.0	95.0	84.7	89.4	82.5	83.0
October-December..	80.1	81.7	90.0	85.1	79.4	85.1	78.9	80.1
1985:								
January-March.....	73.1	76.2	82.8	78.2	72.8	79.4	73.9	76.0
April-June.....	77.7	80.9	83.8	79.9	82.1	91.2	78.0	80.5
July-September....	85.9	89.1	85.3	82.4	89.8	101.1	84.5	87.8
October-December..	94.4	97.3	86.9	83.9	93.8	105.8	93.2	96.0
1986:								
January-March.....	101.9	105.1	86.8	84.4	94.0	109.2	102.6	106.3
April-June.....	107.9	111.7	87.2	85.6	98.5	118.5	107.2	111.5
July-September....	119.4	122.8	88.0	87.2	97.2	118.0	115.5	119.4
October-December..	121.1	122.6	87.8	86.7	93.3	113.3 6/	119.9	122.1

1/ Exchange rates expressed in U.S. dollars per unit of foreign currency.

2/ Producer price indicators—intended to measure final product prices—are based on average quarterly indexes presented in line 63 of International Financial Statistics.

3/ The indexed real exchange rate represents the nominal exchange rate adjusted for the relative economic movement of each currency as measured here by the Producer Price Index in the United States and the respective foreign country. Producer prices in the United States decreased 1.1 percent during the period January 1983 through September 1986. In contrast, producer prices in France, Israel, Italy, Switzerland, Thailand, the United Kingdom, and West Germany increased 13.8 percent, 3,988.0 percent, 21.0 percent, 1.7 percent, 8.6 percent, 20.1 percent, and 2.3 percent, respectively, during the period of investigation.

4/ Reliable producer price data for Hong Kong are not available. Therefore, accurate measures of the real value of the Hong Kong dollar cannot be calculated. Real exchange-rate index data not available.

5/ Data not available.

6/ Data are the latest available as of the final quarter presented above.

Note.—January-March 1983=100.0.

Source: International Monetary Fund, International Financial Statistics, March 1987.

Appendix W

Selected Portions of the Tariff Schedules of the United States Annotated, 1987

Item	Stat. Suffix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		PART 6. - JEWELRY AND RELATED ARTICLES; CAMEOS; NATURAL, CULTURED, AND IMITATION PEARLS; IMITATION GEMSTONES; BEADS AND ARTICLES OF BEADS				
		Subpart A. - Jewelry and Related Articles				
		Subpart A headnotes:				
		1. This subpart covers jewelry and other objects of personal adornment, small articles ordinarily carried in the pocket, in the handbag, or on the person for mere personal convenience, certain religious articles, and certain parts and materials. This subpart does not cover -- (i) luggage (see part 1D of this schedule), (ii) watches (see part 2E of this schedule), (iii) brushes (see part 8A of this schedule), (iv) cigar or cigarette lighters or articles in which cigar or cigarette lighters are incorporated as integral parts (see part 9B of this schedule), (v) pens or pencils (see part 10 of this schedule), (vi) hand fans (see part 13A of this schedule), or (vii) manicure implements, pocket knives, and similar articles (see part 3E of schedule 8).				
		2. For the purposes of this subpart -- (a) the term "jewelry and other objects of personal adornment" (items 740.05 through 740.38), includes rings, ear-rings and clips, bracelets (including watch bracelets and identification bracelets), necklaces, neck chains, watch chains, key chains, brooches, tie pins and clips, collar pins and clips, cuff links, dress-studs, buttons, buckles and slides, medals, military, fraternal and similar emblems and insignia (including those prescribed for military, police, or other uniforms), fobs, pendants, hair ornaments (including barrettes, hair-slides, tiaras, and dress combs), and similar objects of personal adornment, but does not include -- (i) articles described in headnote 2(b) of this subpart, (ii) religious articles of a purely devotional character, or (iii) textile "motifs" as defined in headnote 2(a) of part 4B of schedule 3; and				

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Item	Stat. Suffix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		(b) the term "small articles ordinarily carried in the pocket, in the handbag, or on the person for mere personal convenience" (items 740.05 through 740.15) includes cigar and cigarette cases and holders, spectacle cases, coin purses, card cases, powder boxes, pocket combs, lipstick holders, money clips, and similar articles ordinarily carried in the pocket, in the handbag, or on the person for mere personal convenience, but does not include -- (i) articles described in headnote 2(a) of this subpart, (ii) religious articles of a purely devotional character.				
		3. Items 740.30 through 740.38 cover articles described in headnote 2(a) of this subpart, except buttons, buckles, and slides, and hair ornaments (see parts 7A and 8A of this schedule).				
		4. Small articles ordinarily carried in the pocket, in the handbag, or on the person for mere personal convenience, which are not covered by the provisions of items 740.05 through 740.15, are provided for elsewhere in the schedules (e.g., see parts 1D, 8A, and 9B of this schedule).				
		5. The term "mixed link" in item 740.12 refers to a chain composed of two or more styles or types of link.				

		Jewelry and other objects of personal adornment, and small articles ordinarily carried in the pocket, in the handbag, or on the person for mere personal convenience, all the foregoing, and parts thereof, of precious metal (including rolled precious metal), of precious stones, of natural pearls, of precious metal (including rolled precious metal) set with semiprecious stones, cameos, intaglios, amber, or coral, or of any combination of the foregoing:				
740.05	00	Of silver (including rolled silver) and valued not over $18 per dozen pieces or parts.....	Doz.....	27.5% ad val.	Free (A,E,I)	110% ad val.
		Other:				
		Of precious metals:				
		Necklaces and neck chains, almost wholly of gold:				
740.11	00	Rope.....	X.....	6.5% ad val.	Free (A*,E)	80% ad val.
740.12	00	Mixed link.....	X.....	6.5% ad val.	Free (A*,E)	80% ad val.
740.13	00	Other.....	X.....	6.5% ad val.	Free (A*,E)	80% ad val.
740.14	00	Other.....	X.....	6.5% ad val.	Free (A*,E,I)	80% ad val.
740.15	00	Other.....	X.....	6.5% ad val.	Free (A*,E,I)	80% ad val.
740.20	00	Necklaces, valued not over 30 cents per dozen, composed wholly of plastic shapes mounted on fiber string.....	Doz.....	Free		Free

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Item	Stat. Suffix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
		Jewelry and other objects of personal adornment not provided for in the foregoing provisions of this part (except articles excluded by headnote 3 of this subpart), and parts thereof:				
740.30	00	Valued not over 20 cents per dozen pieces or parts	X	7.2% ad val.	Free (A,E,I)	45% ad val.
		Valued over 20 cents per dozen pieces or parts:				
		Watch bracelets:				
740.34	00	Valued not over $5 per dozen	Doz	14% ad val.	Free (A,E,I)	110% ad val.
740.35	00	Valued over $5 per dozen	Doz	14% ad val.	Free (E,I)	110% ad val.
740.38	00	Other	X	11% ad val.	Free (A*,E,I)	110% ad val.
		Religious articles of a purely devotional character designed to be worn on apparel or carried on or about or attached to the person:				
740.50	00	Rosaries and chaplets	X	4.9% ad val.	Free (A,E,I)	50% ad val.
		Crucifixes and medals:				
740.55	00	Of precious metals (including rolled precious metals)	X	7.8% ad val.	Free (A,E,I)	65% ad val.
740.60	00	Other	X	5.8% ad val.	Free (A,E,I)	45% ad val.
		Rope, curb, cable, chain, and similar articles produced in continuous lengths, all the foregoing, whether or not cut to specific lengths and whether or not set with imitation pearls or imitation gemstones, of metal or of metal and such pearls or gemstones, suitable for use in the manufacture of articles provided for in this subpart:				
740.70	00	Of precious metals (including rolled precious metals)	X	7% ad val.	Free (A,E)	80% ad val.
		Other:				
740.75	00	Valued not over 30c per yard	X	8% ad val.	Free (A,E) 3.2% ad val.(I)	80% ad val.
740.80	00	Valued over 30c per yard	X	11% ad val.	Free (A,E,I)	110% ad val.
		Subpart B. - Cameos; Natural, Cultured and Imitation Pearls; Imitation Gemstones; beads and Articles of Beads				
		Subpart B headnote:				
		1. For the purposes of the tariff schedules, the term "imitation gemstones" means glass, plastics, or other materials made into shapes suitable for use in jewelry or for other ornamental purposes in a manner similar to natural gemstones, whether or not in imitation thereof, but does not include natural gemstones, synthetic gemstones, reconstructed natural gemstones, or imitation pearls.				
		Natural or cultured pearls and parts thereof, drilled or not drilled, but not strung (except temporarily) and not set:				
741.05	00	Natural	X	Free		10% ad val.
741.06	00	Cultured	X	2.1% ad val.	Free (A,E,I)	10% ad val.
741.10	00	Imitation pearls and imitation pearl beads of all shapes and colors, drilled or not drilled, but not strung (except temporarily) and not set	X	8% ad val.	Free (A,E) 3.2% ad val.(I)	60% ad val.

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Item	Stat. Suffix	Articles	Units of Quantity	Rates of Duty		
				1	Special	2
745.60	00	Hooks and eyes	Lb	1¢ per lb. (including weight of cards, cartons, and immediate wrappings and labels) + 5.8% ad val.	Free (A,E,I)	4.5¢ per lb. (including weight of cards, cartons, and immediate wrappings and labels) + 25% ad val.
		Clasps, handbag and similar frames incorporating clasps, and snap fasteners; all the foregoing and parts thereof:				
		Valued not over 20 cents per dozen pieces or parts:				
		Sew-on fasteners, and parts thereof:				
745.61	00	Of plastics, in clips suitable for use in a mechanical attaching device	X	11% ad val.	4.4% ad val.(I) Free (E)	60% ad val.
745.62	00	Other	X	11% ad val.	4.4% ad val.(I) Free (A,E)	60% ad val.
745.65	00	Other	X	6.9% ad val.	Free (A,E,I)	60% ad val.
		Valued over 20 cents per dozen pieces or parts:				
		For jewelry and other objects of personal adornment:				
745.66	00	Of precious metal except silver (including rolled precious metal except silver)	X	6.5% ad val.	Free (A,E,I)	80% ad val.
745.67		Other		11% ad val.	4.4% ad val.(I) Free (A,E)	110% ad val.
	20	Of silver				
	40	Other				
745.68	00	Other		5.3% ad val.	Free (A,E,I)	65% ad val.
		Slide fasteners, and parts thereof including tapes in continuous lengths but not including tapes wholly of textile fibers:				
		Fasteners:				
745.70	00	Valued not over 4 cents each	No	15% ad val.	Free (A*,E,I)	66% ad val.
745.72	00	Valued over 4 cents each	No	15% ad val.	Free (E,I)	66% ad val.
745.74		Parts		23% ad val.	Free (E,I)	66% ad val.
	50	Sliders, with or without pulls	M			
	90	Other	X			
745.80	00	Any article described in the foregoing provisions of this subpart, if Canadian article and original motor-vehicle equipment (see headnote 2, part 6B, schedule 6)	X	Free		
		Subpart B. - Artificial and Preserved Flowers and Foliage; Millinery Ornaments; Trimmings; and Feather Products				
		Subpart B headnotes:				
		1. The provisions of items 748.20 and 748.21 do not include --				
		(i) articles wholly or almost wholly of glass or ceramics;				

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Table O-1
Precious jewelry: Staged reductions in U.S. rates of duty, by TSUS item, 1980-87

(Percent ad valorem)

TSUS item No. 1/	Description	Staged col. 1 rate of duty effective with respect to articles entered on or after Jan. 1— 2/							
		1980	1981	1982	1983	1984	1985	1986	1987
	Jewelry and other objects of personal adornment, and small articles ordinarily carried in the handbag, or on the person for mere personal convenience, all the foregoing, and parts thereof, of precious metal (including rolled precious metal), of precious stones, of natural pearls, of precious metal (including rolled precious metal) set with semiprecious stones, cameos, in taglios, amber or coral, or of any combination of the foregoing:								
	Necklaces and neckchains, almost wholly of gold:								
740.11A*	Rope	11.3	10.6	9.9	9.3	8.6	7.9	7.2	6.5
740.12A*	Mixed link	11.3	10.6	9.9	9.3	8.6	7.9	7.2	6.5
740.13A*	Other	11.3	10.6	9.9	9.3	8.6	7.9	7.2	6.5
740.14A*	Other	11.3	10.6	9.9	9.3	8.6	7.9	7.2	6.5
740.15A*	Other	11.3	10.6	9.9	9.3	8.6	7.9	7.2	6.5
	Religious articles of a purely devotional character designed to be worn on apparel or carried on or about or attached to the person:								
	Crucifixes and medals:								
740.55A	Of precious metal (including rolled precious metal)	16.3	15.1	13.9	12.7	11.4	10.2	9	7.8
	Rope, curb, cable, chain, and similar articles produced in continuous lengths, all the foregoing, whether or not cut to specific lengths and whether or not set with imitation pearls or imitation gemstones, of metal or of metal and such pearls or gemstones, suitable for use in the manufacture of articles provided for in this subpart:								
740.70A	Of precious metal (including rolled precious metal)	15.8	14.5	13.3	12	10.8	9.5	8.3	7
	Clasps, handbag and similar frames incorporating clasps, and snap fasterners; all foregoing and parts thereof:								
	Valued over 20 cents per dozen pieces or parts:								
	For jewelry and other objects of personal adornment:								
745.66A	Of precious metal except silver (including rolled precious metal except silver)	11.3	10.6	9.9	9.3	8.6	7.9	7.2	6.5
745.67 (pt)A	Of silver	25.4	23.4	21.3	19.3	17.2	15.1	13.1	11

1/ The designation "A" means that all beneficiary developing countries are eligible for the Generalized System of Preferences (GSP). "A*" indicates that certain of these beneficiary developing countries, specified in general headnote 3(e) of the Tariff Schedules of the United States Annotated, are not eligible for the GSP.
2/ Rate negotiated in the Tokyo Round of the Multilateral Trade Negotiations, to be achieved through 8 annual reductions, with the final reduction to be effective Jan. 1, 1987.

Source: Federal Register, vol. 44, No. 241, Dec. 13, 1979, p. 72524-5.

Appendix O

Staged Duty-Rate Reductions Under the MTN Applicable to Precious Jewelry for the United States and Selected Foreign Countries

Appendix P

Selected Portions of the TSUS Converted to the Harmonized System Showing Final MTN Concession Rates of Duty Applicable to Precious Jewelry Articles

CHAPTER 71

NATURAL OR CULTURED PEARLS, PRECIOUS OR SEMIPRECIOUS STONES, PRECIOUS METALS, METALS CLAD WITH PRECIOUS METAL, AND ARTICLES THEREOF; IMITATION JEWELRY; COIN

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Notes

1. Subject to note 1(a) to section VI and except as provided below, all articles consisting wholly or partly:

   (a) Of natural or cultured pearls or of precious or semiprecious stones (natural, synthetic or reconstructed), or

   (b) Of precious metal or of metal clad with precious metal,

   are to be classified in this chapter.

2. (a) Headings 7113, 7114 and 7115 do not cover articles in which precious metal or metal clad with precious metal is present as minor constituents only, such as minor fittings or minor ornamentation (for example, monograms, ferrules and rims), and paragraph (b) of the foregoing note does not apply to such articles.

   (b) Heading 7116 does not cover articles containing precious metal or metal clad with precious metal (other than as minor constituents).

3. This chapter does not cover:

   (a) Amalgams of precious metal or colloidal precious metal (heading 2843);

   (b) Sterile surgical suture materials, dental fillings or other goods of chapter 30;

   (c) Articles of chapter 32 (for example, lustres);

   (d) Handbags or other articles of heading 4202 or articles of heading 4203;

   (e) Articles of heading 4303 or 4304;

   (f) Goods of section XI (textiles and textile articles);

   (g) Footwear, headgear or other articles of chapter 64 or 65;

   (h) Umbrellas, walking-sticks or other articles of chapter 66;

   (ij) Abrasive goods of heading 6804 or 6805 or chapter 82, containing dust or powder of precious or semiprecious stones (natural or synthetic); articles of chapter 82 with a working part of precious or semiprecious stones (natural, synthetic or reconstructed); machinery, mechanical appliances or electrical goods, or parts thereof, of section XVI. However, articles and parts thereof, wholly of precious or semiprecious stones (natural, synthetic or reconstructed) remain classified in this chapter, except unmounted worked sapphires and diamonds for styli (heading 8522);

   (k) Articles of chapter 90, 91 or 92 (scientific instruments, clocks and watches, musical instruments);

   (l) Arms or parts thereof (chapter 93);

   (m) Articles covered by note 2 to chapter 95;

   (n) Articles of chapter 96 other than those of headings 9601 to 9606 or 9615; or

   (o) Original sculptures or statuary (heading 9703), collectors' pieces (heading 9705) or antiques of an age exceeding one hundred years (heading 9706), other than natural or cultured pearls or precious or semiprecious stones.

4. (a) The expression "precious metal" means silver, gold and platinum.

   (b) The expression "platinum" means platinum, iridium, osmium, palladium, rhodium and ruthenium.

   (c) The expression "precious or semiprecious stones" does not include any of the substances specified in note 2(b) to chapter 96.

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5. For the purposes of this chapter, any alloy (including a sintered mixture and an inter-metallic compound) containing precious metal is to be treated as an alloy of precious metal if any one precious metal constitutes as much as 2 percent, by weight, of the alloy. Alloys of precious metal are to be classified according to the following rules:

   (a) An alloy containing 2 percent or more, by weight, of platinum is to be treated as an alloy of platinum;

   (b) An alloy containing 2 percent or more, by weight, of gold but no platinum, or less than 2 percent, by weight, of platinum, is to be treated as an alloy of gold;

   (c) Other alloys containing 2 percent or more, by weight, of silver are to be treated as alloys of silver.

6. Except where the context otherwise requires, any reference in the tariff schedule to precious metal or to any particular precious metal includes a reference to alloys treated as alloys of precious metal or of the particular metal in accordance with the rules in note 5 above, but not to metal clad with precious metal or to base metal or non-metals coated or plated with precious metal.

7. Throughout the tariff schedule the expression "metal clad with precious metal" means material made with a base of metal upon one or more surfaces of which there is affixed by soldering, brazing, welding, hot-rolling or similar mechanical means a covering of precious metal. Except where the context otherwise requires, the expression also covers base metal inlaid with precious metal.

8. For the purposes of heading 7113, the expression "articles of jewelry" means:

   (a) Any small objects of personal adornment (gem-set or not) (for example, rings, bracelets, necklaces, brooches, earrings, watch chains, fobs, pendants, tie pins, cuff links, dress studs, religious or other medals and insignia); and

   (b) Articles of personal use of a kind normally carried in the pocket, in the handbag or on the person (such as cigarette cases, powder boxes, chain purses or pill boxes).

9. For the purposes of heading 7114, the expression "articles of goldsmiths' or silversmiths' wares" includes such articles as ornaments, tableware, toilet-ware, smokers' articles and other articles of household, office or religious use.

10. For the purposes of heading 7117, the expression "imitation jewelry" means articles of jewelry within the meaning of paragraph (a) of note 8 above (but not including buttons or other articles of heading 9606, or dress combs, hair slides or the like, and hairpins, of heading 9615), not incorporating natural or cultured pearls, precious or semiprecious stones (natural, synthetic or reconstructed) nor (except as plating or as minor constituents) precious metal or metal clad with precious metal.

Subheading Notes

1. For the purposes of subheadings 7108.10, 7108.11, 7110.11, 7110.21, 7110.31 and 7110.41, the expressions "powder" and "in powder form" mean products of which 90 percent or more by weight passes through a sieve having a mesh aperture of 0.5 mm.

2. Notwithstanding the provisions of note 4(b), for the purposes of subheadings 7110.11 and 7110.19, the expression "platinum" does not include iridium, osmium, palladium, rhodium or ruthenium.

3. For the classification of alloys in the subheadings of heading 7110, each alloy is to be classified with that metal, platinum, palladium, rhodium, iridium, osmium or ruthenium, which predominates by weight over each other of these metals.

Additional U.S. Notes

1. For the purposes of subchapter II, unless the context otherwise requires:

   (a) The term "unwrought" refers to metals, whether or not refined, in the form of ingots, blocks, lumps, billets, cakes, slabs, pigs, cathodes, anodes, briquettes, cubes, sticks, grains, sponge, pellets, shot and similar manufactured primary forms, but does not cover rolled, forged, drawn or extruded products, tubular products or cast or sintered forms which have been machined or processed otherwise than by simple trimming, scalping or descaling;

   (b) The term "semimanufactured" refers to wrought metal products in the form of bars, rods, sections, plates, sheets, strips, wire, tubes, pipes and hollow bars, and to powder (other than primary metals in powder form);

   (c) The term "waste and scrap" refers to materials and articles of metals which are second-hand or waste or refuse, or are obsolete, defective or damaged, and which are fit only for the recovery of the metal content or for use in the manufacture of chemicals, and does not include metals in unwrought form or metal-bearing materials provided for in heading 2618.

2. Coin provided for in heading 7118 which is currently in circulation in any country and is imported for monetary purposes shall be admitted without formal customs consumption entry or the payment of duty. This does not affect any requirements under other provisions of law to the effect that transfers of coin into or through the United States, in an amount exceeding $5,000 on any one occasion, shall be reported as described therein.

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Heading	Stat. Suffix	Article Description	Units of Quantity	Rates of Duty		
				General	Special	2
		III. JEWELRY, GOLDSMITHS' AND SILVERSMITHS' WARES AND OTHER ARTICLES				
7113		Articles of jewelry and parts thereof, of precious metal or of metal clad with precious metal:				
		Of precious metal whether or not plated or clad with precious metal:				
7113.11		Of silver, whether or not plated or clad with other precious metal:				
7113.11.10	00	Rope, curb, cable, chain and similar articles produced in continuous lengths, all the foregoing, whether or not cut to specific lengths and whether or not set with imitation pearls or imitation gemstones, suitable for use in the manufacture of articles provided for in this heading.....	X.....	7%	Free (A,E)	80%
		Other:				
7113.11.20	00	Valued not over $18 per dozen pieces or parts.....	X.....	27.5%	Free (A,E)	110%
7113.11.50	00	Other.....	X.....	6.5%	Free (A,E)	80%
7113.19		Of other precious metal, whether or not plated or clad with precious metal:				
7113.19.10	00	Rope, curb, cable, chain and similar articles produced in continuous lengths, all the foregoing, whether or not cut to specific lengths and whether or not set with imitation pearls or imitation gemstones, suitable for use in the manufacture of articles provided for in this heading.....	X.....	7%	Free (A,E)	80%
		Other:				
		Necklaces and neck chains, of gold:				
7113.19.21	00	Rope.....	X.....	6.5%	Free (A,E)	80%
7113.19.25	00	Mixed link.....	X.....	6.5%	Free (A,E)	80%
7113.19.29	00	Other.....	X.....	6.5%	Free (A,E)	80%
7113.19.30	00	Clasps and parts thereof.....	X.....	6.5%	Free (A,E)	80%
7113.19.50	00	Other.....	X.....	6.5%	Free (A,E)	80%
7113.20		Of base metal clad with precious metal:				
7113.20.10	00	Rope, curb, cable, chain and similar articles produced in continuous lengths, all the foregoing, whether or not cut to specific lengths and whether or not set with imitation pearls or imitation gemstones, suitable for use in the manufacture of articles provided for in this heading.....	X.....	7%	Free (A,E)	80%

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Heading	Stat. Suffix	Article Description	Units of Quantity	Rates of Duty 1 General	Special	2
7113 (con.)		Articles of jewelry and parts thereof, of precious metal or of metal clad with precious metal (con.):				
7113.20 (con.)		Of base metal clad with precious metal (con.):				
		Other:				
		Necklaces and neck chains, of gold:				
7113.20.21	00	Rope	X	6.5%	Free (A,E)	80%
7113.20.25	00	Mixed link	X	6.5%	Free (A,E)	80%
7113.20.29	00	Other	X	6.5%	Free (A,E)	80%
7113.20.30	00	Clasps and parts thereof	X	6.5%	Free (A,E)	80%
7113.20.50	00	Other	X	6.5%	Free (A,E)	80%
7114		Articles of goldsmiths' or silversmiths' wares and parts thereof, of precious metal or of metal clad with precious metal:				
		Of precious metal whether or not plated or clad with precious metal:				
7114.11		Of silver, whether or not plated or clad with other precious metal:				
7114.11.10	00	Knives with silver handles	No	5.5%	Free (A,E)	16¢ each + 45%
7114.11.20	00	Forks with silver handles	No	5.4%	Free (A,E)	16¢ each + 45%
		Spoons and ladles:				
7114.11.30	00	With sterling silver handles	No	6.6%	Free (A,E)	65%
7114.11.40	00	Other	No	4.4%	Free (A,E)	65%
7114.11.45	00	Sets of the foregoing which include two or more knives, forks, spoons or ladles	pcs	6%	Free (E)	65%
		Articles not elsewhere specified or included of a type used for household, table or kitchen use; toilet and sanitary wares; all the foregoing and parts thereof, of silver:				
7114.11.50	00	Sterling silver tableware	X	6.6%	Free (A,E)	65%
7114.11.60	00	Other	X	6%	Free (A,E)	65%
7114.11.70	00	Other	X	6%	Free (A,E)	65%
7114.19.00	00	Of other precious metal whether or not plated or clad with precious metal	X	7.9%	Free (A,E)	65%
7114.20.00		Of base metal clad with precious metal		6%	Free (A,E)	65%
	40	Articles not elsewhere specified or included, of a type used for household, table or kitchen use; toilet or sanitary ware	X			
	60	Other	X			
7115		Other articles of precious metal or of metal clad with precious metal:				
7115.10.00	00	Catalysts in the form of wire cloth or grill, of platinum	X	8%	Free (A,E)	65%
7115.90		Other:				
7115.90.10	00	Of gold, including metal clad with gold	X	7.8%	Free (A,E)	110%
7115.90.20	00	Of silver, including metal clad with silver	X	8%	Free (A,E)	65%
7115.90.50	00	Other	X	8%	Free (A,E)	65%

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Heading	Stat. Suffix	Article Description	Units of Quantity	Rates of Duty 1 General	Special	2
7116		Articles of natural or cultured pearls, precious or semiprecious stones (natural, synthetic or reconstructed):				
7116.10		Of natural or cultured pearls:				
7116.10.10	00	Natural	X.....	6.5%	Free (A,E)	80%
7116.10.20	00	Cultured	X.....	11%	Free (A,E)	110%
7116.20		Of precious or semiprecious stones (natural, synthetic or reconstructed):				
7116.20.10	00	Articles of jewelry	X.....	6.5%	Free (A,E)	80%
		Other:				
7116.20.20	00	Of semiprecious stones (except rock crystal)	X.....	21%	Free (A,E)	50%
7116.20.50	00	Other	X.....	6.7%	Free (A,E)	50%
7117		Imitation jewelry:				
		Of base metal, whether or not plated with precious metal:				
7117.11.00	00	Cuff links and studs	X.....	11%	Free (A,E)	110%
7117.19		Other:				
		Rope, curb, cable, chain and similar articles produced in continuous lengths, all the foregoing, whether or not cut to specific lengths and whether or not set with imitation pearls or imitation gemstones, suitable for use in the manufacture of articles provided for in this heading:				
7117.19.10	00	Valued not over 33 cents per meter	X.....	8%	Free (A,E)	80%
7117.19.20	00	Valued over 33 cents per meter	X.....	11%	Free (A,E)	110%
7117.19.30	00	Religious articles of a purely devotional character designed to be worn on apparel or carried on or about or attached to the person	X.....	5.8%	Free (A,E)	45%
7117.19.50	00	Other	X.....	11%	Free (A,E)	110%
7117.90		Other:				
7117.90.10	00	Necklaces, valued not over 30 cents per dozen, composed wholly of plastic shapes mounted on fiber string	doz.....	Free		Free
		Religious articles of a purely devotional character designed to be worn on apparel or carried on or about or attached to the person:				
7117.90.20	00	Rosaries and chaplets	X.....	4.9%	Free (A,E)	50%
7117.90.30	00	Other	X.....	5.8%	Free (A,E)	45%
		Other:				
7117.90.40	00	Valued not over 20 cents per dozen pieces or parts	X.....	7.2%	Free (A,E)	45%
7117.90.50	00	Valued over 20 cents per dozen pieces or parts	X.....	11%	Free (A,E)	110%

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Appendix Q

Customs Treatment for Selected Foreign Markets and Suppliers

Although the United States and Canada use their own trade classification systems for purposes of statistical reporting and analysis, most countries use the Customs Cooperation Council Nomenclature (CCCN), also known as the Brussels Tariff Nomenclature (BTN), as the basis for tariff classifications. Still other countries use the Standard International Trade Classification (SITC). Under the CCCN, precious jewelry is classified under items 71.12 and 71.15(pt). However, the specific level of detail varies from country to country. This results in some countries classification scheme providing greater detail than others. Most countries under the CCCN scheme specifically provide for jewelry made of silver, other precious metals, and rolled metals, and other countries do not. A discussion of the customs treatment accorded U.S. exports in selected foreign precious-jewelry markets follows.

Q.1. Switzerland

Switzerland assesses duty on imported goods under either a general or preferential tariff. The preferential rates include provisions for bilateral trade with European Community (EC) members, European Free Trade Association (EFTA) members, Spain, and developing nations. Most provisions allow for duty-exempt status for certain products; however, reduced rates apply to some products. Switzerland assesses import duties based on a specific rate per kilogram of gross weight 1/ instead of an ad valorem basis. In addition to the duty, a turnover tax of 9.3 percent is levied on imported precious jewelry unless a wholesale declaration is presented. In certain cases, when the importer plans to consume the goods himself, a tax of 6.2 percent is levied on precious jewelry imports. Switzerland is a signatory to and has ratified the "Convention on the Control and Marking of Articles of Precious Metals." 2/ Precious jewelry from convention member countries are not subjected to further assaying or hallmarking in signatory countries. Imports of precious jewelry into Switzerland are required to bear a precious-metal content mark and a registered identification mark of the manufacturer. Imports of watches and watch cases must also be hallmarked with a special mark that shows that the product is of foreign origin. The product description, tariff item number, and current and final 1987 negotiated rate of duty under the Multilateral Trade Negotiations (MTN) applicable to Swiss imports of U.S. precious jewelry are listed in table Q-1.

Q.2. European Community

The United Kingdom, France, West Germany, and Italy were all among the top 10 markets for U.S. precious jewelry exports in 1986. For statistical reporting and analysis, each country uses a separate classification system. However, for simplification, tariff information on the EC is presented herein. The EC has established several tariff treatment schemes depending on the country, or country grouping, of origin. These tariff treatment schemes include the Common Customs Tariff (CCT), applicable to all MFN countries; Generalized System of Preferences (GSP), applicable to designated developing countries; Preferential Tariff, applicable to nations with historical ties, such as the European Free Trade Area, Mediterranean nations, and signatories of the Lome Convention; and Communist Countries that receive CCT rates under special arrangements.

1/ One kilogram equals 2.2 pounds.
2/ For further information, see ch. 9.

Table Q-1
Precious jewelry: Current 1987 rates of duty in Switzerland applicable to U.S. imports

(Per 100 kilograms of gross)

Classification	Product description	Current 1987 negotiated rate of duty
71.12	Jewelry.....	
71.12.10	Of silver.....	9 Francs
71.12.20	Of gold or platinum.....	50 Francs
71.12.30	Of rolled precious metal.....	3 Francs
71.15	Articles consisting of or incorporating pearls and precious or semi-precious stones:	
71.15.12	Other.....	33 Francs

All EC member countries are required to assess the common duty rate to all third-country imports; however, no duties are assessed on goods traded between member countries. Most EC countries also levy a value-added tax (VAT) on all products, whether imported or domestically produced. The VAT is administered by individual countries, and rates applied in major precious jewelry markets include 15 percent in the United Kingdom, 33.3 percent in France, 14 percent in West Germany, and 18 percent in Italy.

There are no standard marking requirements for precious jewelry imported into the EC. Rather, there are several national standards that are specific to each intended market. Imports of precious jewelry into France are prohibited without the marking of origin legibly and indelibly applied in French, and all imports must be assayed and stamped by a Government office before they are released for distribution. Although West Germany has no general requirement for marking country of origin, manufactures of precious metals must be labeled to show the name of the manufacturer; composition of product, including precious-metal content; and country of origin. The United Kingdom is a signatory to but has not ratified the "Convention on the Control and Marking of Articles of Precious Metals". 1/ Imported precious jewelry from signatory countries is not subject to further assaying or hallmarking.

1/ Ibid.

Marking requirements for selected EC markets are as follows:

Market	Marking required
France.....	Obligatory markings of country of origin, precious-metal content, the process of manufacture, and hallmark.
West Germany.....	Manufacturer's mark, country of origin, process of manufacture, and precious-metal content. 1/
United Kingdom.....	Markings of the manufacture and precious-metal content.
Italy.....	Obligatory markings of country of origin, precious-metal content, registered identification mark, and hallmark.

1/ The karat content of the coating must not be indicated in thousands, karats, or in any additional descriptions on the article.

The product description, tariff item numbers, current and final 1987 rates of duty negotiated under the MTN applicable to EC imports of U.S. precious jewelry are listed in table Q-2.

Table Q-2
Precious jewelry: Current 1987 rates of duty in the EC applicable to U.S. imports

(In percent ad valorem)

Classification	Product description	Current 1987 negotiated rate of duty
71.12	Articles of jewelry and parts thereof, of precious metal or rolled precious metal:	
71.12 A	Of precious metal.....	3.5
B	Of rolled precious metal.....	5.8
71.15	Articles consisting of, or incorporating, pearls or precious or semi-precious stones (natural, synthetic, or reconstructed):	
	Articles consisting of, or incorporating pearls:	
71.15 AII	Other.....	4.9
	Articles consisting of, or incorporating, precious or semi-precious stones (natural synthetic or reconstructed):	
71.15 BIb	Other.....	5.1

Q.3. Hong Kong

Hong Kong is a free port where most imported articles enter duty free. There are no commodity or other taxes levied against imports, and country of origin markings on imported articles are generally not required. Since Hong Kong is a major market for U.S. precious jewelry, the classifications and descriptions are listed below.

Classification	Product description
897.311.....	Jade jewelry, precious metal.
897.312.....	Jewelry, precious metal, gem set (excluding jade jewelry).
897.313.....	Other jewelry, precious metal, not gem set.

Q.4. Japan

The Japanese Customs Tariff schedules provide for classification and rates of duty applied to imports into Japan. These imports are assessed duty at various rates outlined in the schedules based on the country of origin. Specific tariff treatments include: a general tariff, a GATT tariff, a preferential tariff, and a temporary tariff rate. The rate of duty applied to imports from the United States is the lower of the temporary rate and the GATT rate applicable to the particular commodity. In addition to the duty on U.S. precious jewelry imports, there is a 15 percent commodity tax levied. Imports of all articles granted duty concessions under GATT require a certificate of origin. Articles of precious metal must have markings as to precious-metal content and process of manufacture. The product description, tariff item numbers, and current and final 1987 rate of duty negotiated under the MTN applicable to Japanese imports of U.S. precious jewelry are listed in table Q-3.

Q.5. Canada

The Canadian Customs Tariff Act provides for the classification and rates of duty applicable to imports into Canada. Such imports are assessed duty at various rates depending on specific tariff treatment based on the country of origin. Specific tariff treatments include a general tariff, applicable to countries with which Canada does not have tariff arrangements; a most-favored-nation tariff, which applies to U.S. goods; a general preferential tariff, applicable to designated developing countries; a British Preferential Tariff, applicable to certain British countries, colonies, protectorates, territories, or trustees; and a United Kingdom or Ireland Tariff. In addition to duties, a 10-percent excise tax is assessed on all jewelry articles except religious jewelry. Under the Precious Metal Markings Act, all imported articles made of precious metals must be examined by Canadian customs to verify that the quality mark meets the standards of the Canadian market. The accepted quality marks on articles of gold include "Karat," "Carat," "Kt," "Ct," "K," "C," or the decimal equivalent, to which the word "Gold" or "Or" is added. On articles of silver, acceptable markings include "Silver," "Sterling Silver," "Sterling," "Argent Sterling," "Argent," or any abbreviation of these marks, or the decimal equivalent which is 0.925. On gold filled or rolled gold plate articles, other than watch cases, the

Table Q-3
Precious jewelry: Current 1987 rates of duty in Japan applicable to U.S. imports

(In percent ad valorem)

Classification	Product description	Current 1987 negotiated rate of duty
71.12	Articles of jewelry and parts thereof, of precious metal or rolled precious metal:	
71.12.0101	Made of, or combined with, silver or platinum group metals.....	7.8 1/
71.12.0102	Other.....	7.8 2/
71.12.021	Chains for watches, spectacles, or pince-nez, and other ornamental gold chains worn on the person of gold:	8.2
	Other:	
71.12.022	Of gold, value of the part of gold being not less than 80% of the total value.	8.2
71.12.023	Combined or trimmed with gold, value of the part of gold being less than 80% of the total value.	8.2
71.12.090	Other.....	8.2
71.15	Articles consisting of, or incorporating, pearls or precious or semi-precious stones (natural, synthetic, or reconstructed):	
71.15.291	Articles of jewelry and parts thereof.....	7.8 1/

1/ A temporary tariff of 6.2 percent is currently in effect for imported products.
2/ A temporary tariff of 6.6 percent is currently in effect for imported products.

quality markings include "Gold Filled," "G.F.," "Double d'Or," "Rolled Gold Plate," "R.G.P.," "Plaque d'Or Lamine," and also require a Karat mark, or the decimal equivalent designation may be used. On watch cases, the quality marking of "Gold Filled," "G.F.," "Double d'Or," "Rolled Gold Plate," R.G.P.," or "Plaque d'Or Lamine" are acceptable. A karat mark must be used in connection with the quality mark. Quality marks can be directly applied to gold filled or rolled gold jewelry but it is not compulsory. Any item that has a quality mark must also have a registered trademark. The trademark must be stamped, branded, engraved, or imprinted upon the article and should be applied in the same manner as the quality mark, which must be as indelible and permanent as the article will permit. The product description, tariff item numbers, and current and final 1987 rates of duty negotiated under the MTN applicable to Canadian imports of U.S. precious jewelry are listed in table Q-4.

Table Q-4
Precious jewelry: Current 1987 rates of duty in Canada applicable to U.S. imports

(In percent ad valorem)

Classification	Product description	Current 1987 negotiated rate of duty
36200-1	Articles consisting wholly or in part of sterling or other silverware, not otherwise provided for, manufactures of gold or silver, not otherwise provided for.	11.0
64700-1	Jewelry of any material for the adornment of the person, not otherwise provided for.	13.3
65100-1	Buttons of all kinds, recognition buttons, and cuff or collar buttons.	12.6 and 5¢ per gross
69105-1	Communion sets ad other religious articles.....	Free

Q.6. Australia

Australia assesses duty on imported goods under either a general or preferential tariff. Imports from the United States and other developed countries are subject to general tariff rates. Preferential tariff rates apply to declared preference countries and regional trading partners. Specific duty rates applied to an imported article depend on the commodity and the country of origin. Imports of jewelry into Australia require a trade description that includes the country of origin, a precious metal content mark, and the manufacturer's mark affixed in the form a label or brand. The product description, tariff item numbers, and current rates of duty applicable to Australian imports of U.S. precious jewelry are listed in table Q-5.

Table Q-5
Precious jewelry: Current 1987 rates of duty in Australia applicable to U.S. imports

(In percent ad valorem)

Classification	Product description	Current rate of duty
71.12	Articles of jewelry and parts therefor, of precious metal or rolled precious metals:	
71.12.100	Brooch pins; catches and joints for pins; clasps; and parts.....	25.0
71.12.900	Other.....	25.0
71.15	Goods consisting of, or incorporating, pearls or precious or semi-precious stones (whether natural, synthetic, or reconstructed).	25.0

Table Q-6
Precious jewelry: Preferential tariff treatment offered by selected countries in 1987

Country and item No.	Preferential tariff program	Preferential duty rate
Canada		
36200-1.....	British preferential tariff.....	11.0
	General preferential tariff 1/.....	7.0
	United Kindgom and Ireland.....	11.0
64700-1.....	British preferential tariff.....	13.0
	General preferential tariff 1/.....	8.5
	United Kindgom and Ireland.....	13.3
65100-1.....	British preferential tariff.....	12.6 and 5¢ per gross
	General preferential tariff 1/.....	8.0 and 5¢ per gross
	United Kindgom and Ireland.....	12.6 and 5¢ per gross
Japan		
71.12.....	Generalized System of Preferences.....	Free
71.15.291....	Generalized System of Preferences.....	Free
EC		
71.12.....	Bilaterial agreements with Mediterranean countries.....	Free
	European Free Trade Association.....	Free
	Lome Convention II.....	Free
	Generalized System of Preferences 2/.....	Free
71.15 AII BIb....	Bilaterial agreements with Mediterranean countries.....	Free
	European Free Trade Association.....	Free
	Lome Convention II.....	Free
	Generalized System of Preferences 2/.....	Free
Australia		
71.12.100....	Developing countries.....	20%
71.12.900....	Papua New Guinea.....	Free
	Developing countries 1/.....	20%
	Canada.....	15%
	Papua New Guinea.....	Free
71.15.....	Developing countries 1/.....	20%
Switzerland 3/		
71.12.....	Generalized System of Preferences.....	Free
	European Free Trade Association.....	Free
71.12.10.....	Bilateral Agreement with Spain.....	2.79 Francs
71.12.20.....	Bilateral Agreement with Spain.....	15.50 Francs
71.12.30.....	Bilateral Agreement with Spain.....	1.11 Francs
71.15.12.....	Generalized System of Preferences.....	Free
	European Free Trade Association.....	Free
	Bilateral Agreement with Spain.....	10.3 Francs

1/ Developing countries, excluding Taiwan.
2/ Although no import ceiling applies, the EC uses a reference base equal to 1 percent of the total imports to assess any economic difficulties arising from perferential tariff treatment; imports from Taiwan are excluded.
3/ Duties are applied per 100 kilograms of gross weight.

Appendix R

List of Beneficiary Countries in the U.S. Generalized System of Preferences

BENEFICIARY COUNTRIES IN THE U.S. GENERALIZED SYSTEM OF PREFERENCES

Independent Countries

Angola
Antigua and Barbados
Argentina
Bahamas, The
Bahrain
Bangladesh
Barbados
Belize
Benin
Bhutan
Bolivia
Botswana
Brazil
Brunei Darussalam
Burkina Faso
Burma
Burundi
Cameroon
Cape Verde
Central African Republic
Chad
Chile
Colombia
Comoros
Congo
Costa Rica
Cyprus
Djibouti
Dominica
Dominican Republic
Ecuador
Egypt
El Salvador
Equatorial Guinea
Fiji
Gambia, The
Ghana
Grenada
Guatemala
Guinea
Guinea Bissau
Guyana
Haiti
Honduras
India
Indonesia
Israel
Ivory Coast
Jamaica
Jordan
Kenya
Kiribati
Korea
Lebanon
Lesotho
Liberia
Madagascar
Malawi
Malaysia
Maldives
Mali
Malta
Mauritania
Mauritius
Mexico
Morocco
Mozambique
Nauru
Nepal
Nicaragua
Niger
Oman
Pakistan
Panama
Papua New Guinea
Paraguay
Peru
Philippines
Portugal
Romania
Rwanda
Saint Lucia
Saint Vincent and the Grenadines
Sao Tome and Principe
Senegal
Seychelles
Sierra Leone
Singapore
Solomon Islands
Somalia
Sri Lanka
Sudan
Suriname
Swaziland
Syria
Taiwan
Tanzania
Thailand
Togo
Tonga
Trinidad and Tobago
Tunisia
Turkey
Tuvalu
Uganda
Uruguay
Vanuatu
Venezuela
Western Samoa
Yemen Arab Republic (Sanaa')
Yugoslavia
Zaire
Zambia
Zimbabwe

Non-Independent Countries and Territories

Anguilla
Bermuda
British Indian Ocean Territory
Cayman Islands
Christmas Island (Australia)
Cocos (Keeling) Islands
Cook Islands
Falkland Islands (Islas Malvinas)
French Polynesia
Gibraltar
Heard Island and McDonald Islands
Hong Kong
Macau
Montserrat
Netherlands Antilles
New Caledonia
Niue
Norfolk Island
Pitcairn Islands
Saint Christopher-Nevis
Sanit Helena
Tokelau
Trust Territory of the Pacific Islands
Turks and Caicos Islands
Virgin Islands, British
Wallis and Futuna
Western Sahara

BENEFICIARY COUNTRIES IN THE U.S. GENERALIZED SYSTEM OF PREFERENCES

Associations of Countries (treated as one country)

Member Countries of the Caribbean Common Market (CARICOM)	Member Countries of the Cartagena Agreement (Andean Group)	Association of South East Asian Nations (ASEAN)
Consisting of:	Consisting of:	Consisting of:
Antigua and Barbuda	Bolivia	Brunei
Bahamas	Colombia	Indonesia
Barbados	Ecuador	Malaysia
Belize	Peru	Philippines
Dominica	Venezuela	Singapore
Grenada		Thailand
Guyana		
Jamaica		
Montserrat		
Saint Christoper-Nevis		
Saint Lucia		
Saint Vincent and the Grenadines		
Trinidad and Tobago		